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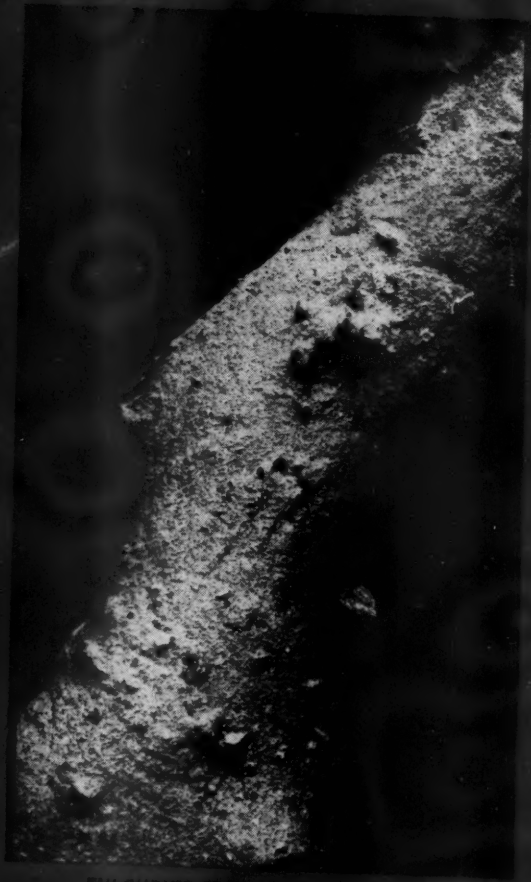
PR

ROCKS and MINERALS

JUL 24 1957

STAMP
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Mineralogy
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Geology
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Lapidary



FULGURITE FROM TRONA, CALIF.
Fulgurites are thin glass tubes
formed from sand by lightning.

60c

JULY - AUGUST, 1957

WHOLE NUMBER 259

A NEW GEM STONE—GREENED AMETHYST

Editor R&M:

As the world wide distributing agent for Greened Amethyst, I wish to thank you personally, and in the name of the owner of the mine, and producer, Senor Teddy Badin, owner of Th. Badin de Minerios, Ltda. of Rio de Janeiro, Brazil, for your courtesy in writing the story of these exquisite stones in a recent issue of your "Rocks and Minerals" magazine.

At the request of Senor Badin, we are sending you, under separate cover, a nice, cut stone of Greened Amethyst (the Stone of Mystery) and also a specimen of the amethyst as mined except that the termination of the crystal has been heat-treated to produce a green color from the natural, purple amethyst. The mine that produces these stones is near the town of Montezuma in the State of Bahia, Brazil.

As far as we are able to determine, after offering substantial rewards for information for a number of years, this is the only commercial deposit of amethyst that when heat-treated produces the exquisite shades of green known as "Greened Amethyst." All other types of amethyst wherever found, I am sure you realize, after passing through the same process produce various shades of yellow or reddish brown. In fact, this is the commercial source of practically all of the finer qualities of citrine, especially the Madeira and red browns.

Senor Badin, a man of ample means, is the sole owner of the very large deposit of amethyst possessing this peculiar characteristic, of such mystery that we are unable to determine its cause. Hence the description of "Stone of Mystery."

Due to Senor Badin's exclusive ownership and the fact that only one mine in all the world is capable of producing Greened Amethyst, we are able to guarantee to the jewelry trade that these stones will have a firm value at all times and not be subject to the fluctuation in price of the purple amethyst when a very large deposit is found. When one considers that a perfect amethyst stone of purple must be heat-treated in order

to produce a Greened Amethyst, the price is extremely reasonable. Not only must you start with a stone of value, but you must risk the inevitable large percentage of breakage as the result of natural causes in the heat treatment. We are using every effort to make this magnificent stone available to the jewelry trade on a world-wide basis at reasonable prices. In offering these stones as Senor Badin's distributor, the prices start at \$2.00 per carat going up to our best commercial grade, as sold in the United States, of \$7.50 per carat.

Occasionally stones are found of such superlative green color and size that they are sold for prices up to \$12.00 to \$15.00 per carat retail. The differential in price is due, as in natural amethyst, to the depth of color offered and the size of the individual stones.

All prices quoted above are retail and are the approximate prices quoted to the jewelry trade for resale.

We are cutting all Greened Amethyst at the present time in our shops in Rio de Janeiro, using the finest skilled lapidaries, who have been trained to cut for the American market. Greened Amethysts are available in calibrated stones exclusively.

Trusting that the above will be of interest and thanking you again for your courtesy in writing the story of Greened Amethyst the (Stone of Mystery), I am,

Cordially yours,
Gilbert W. Withers,
1405 West Paces Ferry Road,
Atlanta 5, Ga.

May 17, 1957

EDITOR'S NOTE: A very nice specimen, one-half purple amethyst and the other half Greened Amethyst, was received from Mr. Withers. A beautiful faceted Greened Amethyst, octagon shape, 16x12 mm, 11.67 carats, accompanied the specimen. These two very fine gem stones carried a label which read:

COMPLIMENTS OF

Theophilus Badin of Th. Badin de Minerios, Ltda, Rua Sacadura Cabral, 51, Rio de Janeiro, Brazil—Producer

and
Gilbert W. Withers, 1405 West Paces Ferry Road, Atlanta, Georgia—Distributor.

ROCKS & MINERALS

PETER ZODAC, Editor and Publisher
America's Oldest and Most Versatile
Magazine for the Mineralogist, Geo-
logist, Lapidary.

Published Bi-Monthly

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WHOLE NO. 259

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JULY-AUGUST 1957

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Chips From the Quarry

RAPID CRYSTAL GROWTH IN COQUINA ROCK OF FLORIDA

By **WILLIAM C. CASPERSON**

(formerly Curator, Paterson, N. J. Museum)
Route 2, Box 377, Vero Beach, Florida

I am very much interested in the article in your January-February 1957 *Rocks & Minerals* entitled "A Petrifying Spring in Caldwell's Cave, W. Va."

In the article the author evidences surprise at the crystallization taking place in a comparatively brief period of time.

The fact is that crystal and mineral growth does not necessarily require long periods of time. The most essential factor in crystal growth is favorable conditions.

Growth is the deposition of elements in field, either atomic or molecular (atom groups). When conditions are met to permit this to take place, growth in crystallization results irrespective of time.

In the fall of 1938 I was invited by Edwin Radinsky, then secretary of the Fort Pierce Chamber of Commerce, to come to Florida and help in the development of the Fort Pierce harbor and port. In conversation with Mr. Radinsky he informed me that the United States Engineers had condemned the exclusive use of coquina rock boulders in building the channel jetties on the ground that the coquina rock was not stable enough for permanent structures. The engineers recommended that granite boulders be placed on top of the existing coquina boulders.

Mr. Radinsky questioned the engineers' statement relative to the instability of the coquina boulders. He told me it seemed that since the coquina boulders had been placed there, which was only a few years, they had grown together until in places they had actually united to form a solid mass.

I suggested that we drive out to the jetties and examine the rocks. Sure enough, the large coquina boulders had

actually grown together where they touched and where they were in contact with the waters of the ocean.

I had my microscope with me so I picked up a piece of coquina rock lying on the beach and examined it. Within and between the coquina shells there were tiny calcite crystals, clear and perfect, filling these open spaces in the coquina rock.

I have since examined numerous specimens of the coquina, so common in Florida, and invariably find tiny calcite crystals or massive calcite filling the spaces in the rock.

This deposition and growth of calcium-carbonate material continues wherever the calcium-laden waters are in contact with the coquina shells, forming a solid mass of crystallized and semicrystalline material. Elements come out of solution to form crystals and semi-crystalline structures when the chemical content of the solution reaches a state beyond the saturation point.

This growth in the coquina rock here in Florida is continuing all the time wherever proper conditions permit, and will continue through the years under these conditions until the material becomes limestone. The reorientation of atoms in the metamorphic process may eventually result in the formation of marble.

Here is a beautiful example of crystal growth taking place right here in Florida where it can be observed and studied. Instead of the coquina rock disintegrating, as the engineers seemed to assume, the formation bears evidence of continuing growth and reveals one of the processes of a living and growing universe.

VACATION COLLECTING

by J. Norman Convery

R. D., Far Hills, N. J.

Being a rock hound, camera hound and a typical 'get in the car and go places family' we had quite a collecting, picture taking, sightseeing trip this past August.

I've found that preparation is a great factor in the success of such a trip, so starting back in April I started to make reservations for such things as the ferry Bluenose out of Bar Harbor, Maine to Yarmouth, Nova Scotia, the Princess Helene from Digby, N. S. to St. Johns, New Brunswick and a place to stay at North Conway, N. H. Other items taken care of 'way in advance was a meeting with the head of the Geology Dept. at Acadia University at Wolfville, N. S., also a three month session of letters, 'phone calls and pestering people in general for

permission to visit, collect and take pictures at the famous Ruggles Mine at Grafton Center, N. H. One other big and heavy deal was a trade with John Dillingham of Naples, Maine. Since his daughter Jerry works in Portland during the summer it was easy, I'd drop his load of minerals off at a spot he'd name in Portland and I'd see him in about ten days to pick up my exchange package. It worked fine.

All we had to do now was load up our Sterling Hill and Franklin exchange material and wait for our vacation to start.

At last the day came and we took off. First stop, the very nice mineral shop of our old friend, guide and expert on Connecticut locations, Ronald Jannuzzi.



This is the beach at Morden. Nova Scotia, Canada, on the Bay of Fundy.

He certainly has been working on that place and it doesn't look much like it did when Dave Seaman and I paid him a visit last Fall.

Next stop was a visit to the Schortmann's mineral shop at Easthampton, Mass. Here we were treated like visiting royalty, saw some wonderful specimens and my 6½-year-old daughter did some very fancy trading on her own and came away very happy and four nice specimens richer for her own collection, all free. The young one really has the makings of a real trader. Of course we did some other sightseeing between our mineral stops but they would be of no interest in this rock trip history.

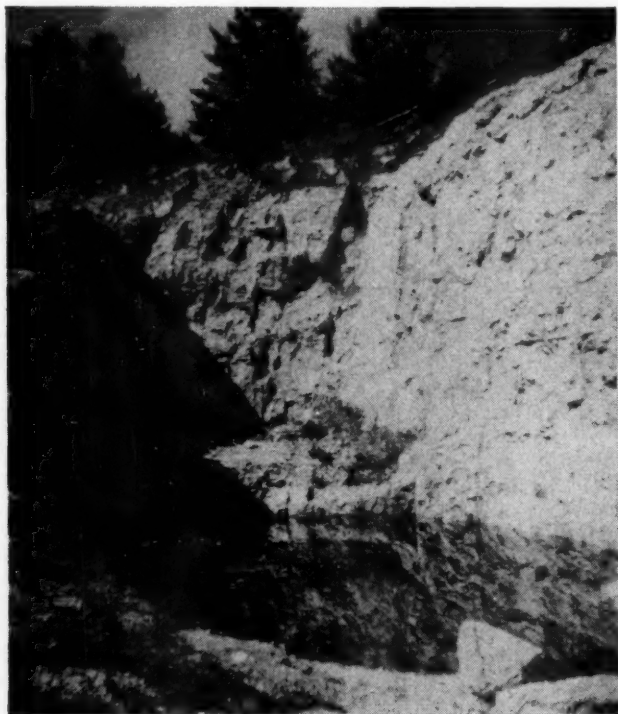
Saw a Fossil shop sign in Maine, of course we made a stop and a Swap. We came away with two very fine polished Montana Agates and a vial of Atomic Bomb Blast fused sand from Alamogordo, New Mexico.

Also got a bit of shell sand from the beach in Acadia National Park. It contains the spines of sea urchins—look like small cucumbers under the lense. Who knows, some day I might meet a sand collector with a mineral to trade.

The boat trip to Yarmouth, Nova Scotia was just great. Nice clean ship, good food and weather, the minerals were scarce.

Once in Nova Scotia the minerals, scenery, shells, food, etc. were no longer scarce. This was our third trip to Nova Scotia and have now covered every inch of it. Try it, a wonderful place to vacation.

A stop at the beach at Lockport rewarded us with sea dollars, razor clams and the meeting of a wonderful young old man who admits his youthful condition at his ripe age is due to a mattress stuffed with eel grass. Must try some,



Tamminen's quarry, Norway, Maine

some time. (My wife says it's too late already).

Made a stop at The Ovens Natural Park, site of 1861-63 Nova Scotia Gold Rush. Old drifts and workings all over the place. Came away with a gold nugget and a small piece of scheelite.

A few days later we pulled into Wolfville, Nova Scotia, and called up Prof. Bancroft of the Acadia University. Mrs. B entertained the wife and daughter while I had a tour of the labs and collections with the good Professor. We negotiated a little trade and it was a good one, we were both pleased with our new treasures. One of mine was a nice group of glass-clear analcites from a trap vein from Pearsboro, N. S.

The rest of the day we spent on Cape Blomidon, N. S., an old haunt of ours, having been here two years ago. Agate, amethyst, beautiful pebbles and great fun were collected by the 3 Convery rock

hounds. Some zeolites but early in the spring is the best time to collect here, if zeolites are your objective.

Next day, on to Morden to try to locate the "Mother Vein" of mordenite which is usually found as beach pebbles. A most successful day. Found the mordenite vein, found other beautiful zeolites, had a very fine beach fire and picnic and to top it off met an old college professor of mine, Prof. Jay Reed Gould 3rd, hadn't seen him in over twenty years, real small world we rock hounds live in.

Back to the U.S.A. and we settled ourselves at Posey Patch in North Conway and worked out of there for nine days. Our landlord spent his spare time looking up rock locations for us. Mr. Bailey is a potential hound.

The "House of Color", near Jackson, N. H., sells some minerals and gems along with their main item, colored slides. There, sat a beautiful Newry



Main shaft at the Wardwell Mine, Albany Twp., Maine.

beryl with a 3-figured price tag on it. No, it wasn't theirs, it belonged to their supplier, many miles away—so off we went to Whitefield, N. H. to meet Mr. and Mrs. Raether. They are running their son's business while he is in Germany on Uncle Sam's business. Very nice people and a very nice visit. We did a little trading and I came back to the "House of Color" with a note releasing the beryl to me. Boy, it's a beauty!

On our way back from Whitefield we passed (but we backed up and stopped) another mineral shop on Rt. 2 at Jefferson Highlands, N. H. Here we did a bit of horse trading and came away with two nice Randolph, N. H. quartz crystal groups and a big fat beryl crystal out of the Wheeler Mine, located at West Bethel, Maine. Oh yes, also ten beautiful terminated beryl crystals from Newry, Me.

We got to figuring that a mine that could produce a beryl like that could also

produce other nice specimens. How true! Next day off to West Bethel, Maine. While looking for the Wheeler Brothers we discovered a big pile of 'Spar' on a platform in Bethel waiting to be loaded into railroad cars, this load was out of the Nevell mine at Newry. Easiest collecting of the trip. Sat in the car, looked over the heap, stepped out and picked up three nice pieces, spodumene, triphylite and graphic granite with a nice tourmaline in it.

One of the highlights of the trip was meeting the Wheeler Brothers. Two really fine fellows. They said the road to their mine was terrible, it was raining now to boot, so I did my collecting in their shop. Some shop, they were cutting their own mica and it's the first I'd seen of a mica cutting operation. Those girls really were fast in trimming out the stuff. Beautiful mica, too. Came away with some really beautiful beryl crystals



Famous BB7. From this pit came 17,000 carats of gem tourmaline.

and one almandite garnet that went six inches across. I repeat, couldn't meet two finer fellows.

We had visits with our friend, John Dillingham and his family—always like these annual visits, we lose a lot of sleep but it's worth it. John and his gang will sit up all night and talk minerals, so will we—result, no sleep.

Bumpus Mine. Pretty well picked over but the collector who wants to collect yellow jackets should do very well here.

Stopped at the famous Maine Sign below Bumpus, took some pictures and while having a coke got the directions to the Wardwell Mine. Wow! Met Mr. Wardwell and he too was a wonderful host. First crack out of the bag my wife picked up a seven by two inch beryl crystal. Our little rock hound Suzanne came up with a terminated black tourmaline and all in all we had a field day.

Next we visited Tamminen's and BB7.

We had been to both the year before but it was still good. Even came out with a very fine batch of lepidolite crystals in matrix. Both quarries are in Norway, Me.

Had no desire to spend a day digging at Love Joy Pits, North Conway, N. H. since I have acquired nice specimens from there but we did want to visit the place and get at least one picture. Hardest place to find yet, the natives that live within half a mile look surprised when you ask about it—never even heard about it. We found it, put in on film and beat it—more yellow jackets.

We spent a few hours visiting the Andersons at Campton, N. H. Horses, white rats, a monkey, plus a mineral shop. Had a real fine swapping session with Mrs. A. and came away loaded down by a dozen beryl crystals and a nice chunk of that complex Ruggles uranium ore. That cost me a big chunk of doverite, but it was well worth it.



Ruggles Mine, Grafton Center, N. H. Upper left opening is the main truck entrance.

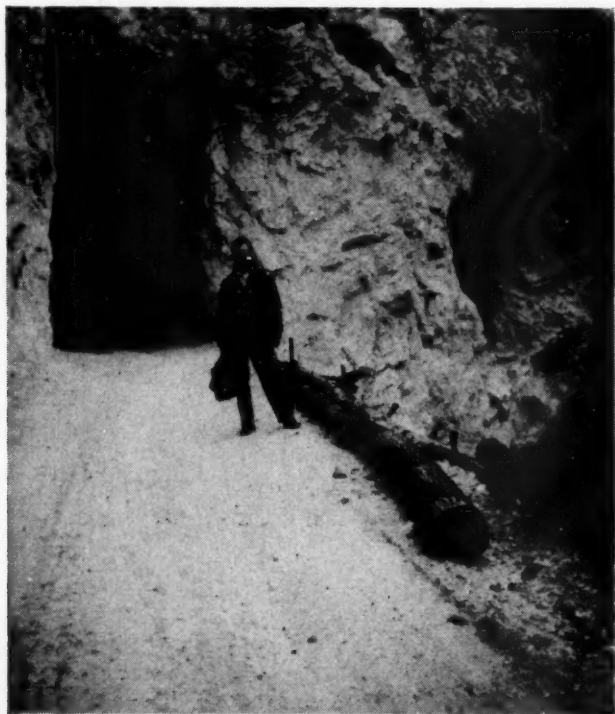
Now we reach the high point, the climax of the trip. Right! An afternoon at Ruggles. It was cloudy but the rain held off and we had a great time. We covered every inch of the place and it's just a shame some rich millionaire doesn't buy the place and dedicate it to all rock hounds. Best out of there, from a miner on a trade, was a four inch tabular aquamarine beryl. The reasoning in back of keeping people out of Ruggles is very sound and it's just a shame it has to be, but it is closed. I understand we were the first ones in, in almost three years. We are very grateful to the people that made it possible. Actually our main interest was in getting pictures. Despite the cloudy day we did manage to get some good ones.

One more stop on the way home, the "House of 25,000 Gifts" at White River Jct., Vermont. Our old friend, Mr. R. G.

Miller, again came through with a nice swap and we said goodbye 'till next year. Then I ran into him at the Hardware Show in New York less than a month later. Indeed a small world.

Out of this trip we added about 200 specimens to our own collection and also sent a batch up to the American Museum of Natural History. Even have some left for trading. All in all, a pip of a trip. Oh yes, we also added three hundred and seventy-three 3 D slides to our collection. Pretty soon we'll be able to sit at home and visit all the famous mineral locations. We still have one moon crater and 3 of the canals on Mars to visit again. The light wasn't too good on our other visits.

(All the photographs were taken by the author and the originals are all 3 D Kodachromes).



Here is proof that I got to the Ruggles Mine.
This picture was taken by my wife, Merrie.

ROSIWAL METHOD OF PETROGRAPHIC ANALYSIS IN LEGAL WORK

Leroy T. Patton *

Abstract. - An illustration of the use of the Rosiwal method of petrographic analysis in a legal action and discussion of the advantages of this method in such work.

The value of a Rosiwal petrographic analysis in legal work came to the attention of the writer in an unusual way. While visiting in the home of a relative in another state, attention was called to the plight of a coal miner in whom the host was interested, the miner's trouble having come to the notice of the family of the host through the miner's wife who did housework for them.

The man in question had worked many years as a driller for a coal mining company, and had contracted silicosis as result of inhaling dust from a shale stratified with the coal bed, and had become incapacitated for work.

He had applied for workman's compensation, but the company opposed his claim on the ground that the shale contained no silica and he, therefore, could not have contracted silicosis as a result of employment with them.

This was a very specious argument, and to the uninitiated seemed reasonable, since the ordinary person does not think of shale as containing silica, although geologists are familiar with the fact that shales do contain varying amounts of silica.

The opposition of the mining company was also possibly influenced by the thought that to admit that a case of silicosis had developed from the dust of the shale in question might prove to be the basis for other similar claims.

Upon suggestion of the host, the writer took several samples of the shale, and upon return to his laboratory, subjected them to petrographic examination.

Standard thin sections of the shale were prepared and examined under a petrographic microscope. This examination revealed very many minute fragments of silica embedded in the shale matrix. A usual Rosiwal quantitative analysis was then made to determine the percentage of silica and the matrix in which it was embedded.

An official report of this analysis was prepared explaining the method and its results, and this report was submitted to the Industrial Commission which had the case under consideration.

The report convinced the Commission that the question of silica in the shale should be thoroughly investigated, and for this purpose they ordered two chemists of their own employment to go to the mine and take samples and make chemical analyses. When these chemical analyses were found to be in agreement with the analysis of the writer and Board of Examining Physicians pronounced the claimant ninety per cent disabled by reason of silicosis, he was granted full compensation.

This case illustrates some of the advantages of the Rosiwal method. The analysis was easily and quickly made. It was easily explained and easily understood, as was shown by the Commission's action in being convinced of its worth although the members of the Commission had never even heard of such a method before. On the other hand, a chemical analysis is complicated and not easily explained nor easily understood by non-technical persons. By making use of the Rosiwal method it was possible to make a report combining a geological report with a technical analysis which is not possible with a chemical analysis as the latter is necessarily made by a chemist, not a geologist. The fact that the analysis was based on what was actually seen under the microscope gave it a clarifying character not unlike that of a graphic presentation.

The writer accepted no fee for his services, although the family, out of their meager resources endeavored to force one upon him, but their deep and lasting gratitude constitutes one of the richest fees he has ever received.

(Continued on page 384)

DELVING INTO DELAWARE

by **BOB AND HAZEL REYNOLDS**

470 Stocksdale Rd., RD 2, Glenarm, Md.

Two interesting specimens of petrified wood were seen by the writers in Dover, Delaware on May 4th. Decay had set in before petrification and the material was splintery rather than solid, tan to brown in color.

One specimen was found at Cape Henlopen and is on display in the Delaware State Museum on S. Governors Ave., Dover. It is approximately 5"x7"x20". Also on display there are Indian artifacts which include among other minerals, red and brown jasper, black and red quartz. Except for a large excellent relief map of the State there is little else in the museum of interest to Rockhounds, a situation which these collectors intend to remedy soon.

The other piece of petrified wood belongs to Bullock Bros., proprietors of a feed store on S. State St. It is approximately 1½"x2"x18" and weighs 2½ lbs. They would kindly show it to any interested party.

During a pleasant conversation with Messrs. Russell and George Bullock, naturally rock collecting was mentioned. Russell surprised these collectors by reaching beneath the counter, blowing away several months accumulation of dust and feed, and presenting the aforementioned specimen for inspection. That it was found somewhere in the area is all they know of its history. Russell reported that as a boy he found near Moore's Lake (½ Mi. S. of Dover on Rt. 113A) what Rockhounds know as rattle boxes. These contained various colored sands.

The writers are convinced, though they have not had a chance as yet to verify this belief, that Delaware waters possess the proper minerals and conditions for petrification of wood. Mr. Fred T. Reynolds, father of the writer, reported that former generations in Delaware made whetstones by choosing a piece of either white pine or cypress, burying one end of it in the bed of a running stream, and leaving it

to petrify for nine years. These collectors will endeavor to locate such a whetstone for verification.

Mr. Zodac, editor of this magazine, has a piece of chocolate-brown petrified wood 1"x2"x16" weighing 3½ lbs. which came from Drawyers Creek in N. central Delaware, a fresh water stream. Cape Henlopen where the museum specimen was found is in southern Delaware on the ocean. Delaware is interlaced with fresh water ponds and streams too numerous to mention, as well as possessing miles of salt water coastline. The writers expect to find petrified wood in central and lower Delaware.

The American Guide Series book, **DELAWARE***, reports the following under the heading, Natural Setting (pg. 10):

"The greater part of Delaware—the part lying within the Coastal Plain—is underlain by Cretaceous and Tertiary sediments that are covered to an average depth of 25 feet by unconsolidated Pleistocene sand and gravel. Exposures of these older sediments are rare. The northern part of the State—the Piedmont region—is composed of pre-Cambrian rocks on which are patches of coarse red sand and gravel of Pliocene age.

"Kaolin, quartz, feldspar, mica, and the locally famous Brandywine blue granite (of which the Lewes breakwater was constructed in 1828-35) are found in commercial quantities in the north. Iron has been mined at Chestnut and Iron Hills. Many choice specimens of garnet, tourmaline, and amethyst have attracted collectors to the region.

"Cretaceous formations and clays important in terra cotta manufacture occur just to the south. The soil here is principally clay mixed with loam. Farther south are Tertiary white and blue clays underlying a sandy soil."

On page 387 this book says, "William D. Waples established in 1817 (a prim-

live blast furnace at Millsboro) and operated on bog ore until 1836. Bog ore (limonite) resulted from the action of organic acids in swamps on iron compounds; the air oxidized these salts and iron hydroxides resulted. In 1833 an output of 600 tons of pigs and castings were produced.

"At Cape Henlopen salt wells were dug to collect seeping water that contained more salt than did the seawater. As early as 1832 more than 1,000 bar-

rels of salt were reclaimed annually by primitive methods along the coast of Sussex Co.

"Sand from dunes at Lewes has been shipped as far as the Mississippi."

Mr. Zodac delighted the writers by suggesting a combined tour of Delaware which is soon to be carried out. We are confident that much of interest to fellow Rockhounds will result.

*(Fed. Writers' Project of WPA. Viking Press, New York 1938)

"FIELD TRIP IN THE DEEP SOUTH"

"JUD" LOCKE

39 - 48th St., Gulfport, Miss.

Ping! Ping! Ping! I muttered a little and turned over. Whr-r-r-r, the clock got as mad as a rattle-snake with tobacco spit in his eye. A wild lunge and I hit the cut-off button. With a few choice words about alarm clocks in general and this one in particular I sleepily put my feet on the floor. For a few drugged moments I sat there marshalling my thoughts. Why had I set the clock for such an unearthly hour? Then, came the light. Today we had planned a field trip to Bell Creek, about eighteen miles northwest of Gulfport, Miss. Hastily dressing I put the coffee pot on and got my gear together. After coffee I drove to Floyd Martin's house. Complaining about the unearthly hour, and putting on his clothes at the same time, he got into the car, and demanded to know why we were getting up so early in the morning? I patiently explained that the big agates came out on the beach at night and went back into the creek at sun-up. The light between day-break and sun-rise had no bearing on it at all.

There was good light when we arrived at the creek and parked. We scrambled out of the car and started searching the gravel bar under the bridge. I found a fragment of pink petrified wood that looked promising, so we headed up the creek to locate the log it came from, stopping at each gravel bar to search before moving on. Finally we ran out of bars

where the creek ran between two high banks. We had our choice, wade or take the woods along the banks. Now the woods along this part of Mississippi consist of Green Briar (Bamboo) and scrub oaks, "Bamboo" and Brush, "Bamboo" and fallen trees, "Bamboo" and gall-berries and some more "Bamboo." The streams at this time of the year are about 50 degrees. To most Northern Rock-hounds this would be like Hot Springs, Arkansas, but to the dyed in wool rebel it is more like a section of the Arctic Ocean. We debated our choice for a moment, then I gingerly placed a warm dry tootsie in the sparkling clear water and let out a gentle moan that could be heard only to Seattle, Washington. I shuddered and started wading. Floyd Martin, with a muttered remark about what his wife would say if she could see him, floundered along with me. Our feet did not stay cold long, I suppose they become numb.

We made a couple of bends like this, probing each suspicious looking log to see if it was the pink petrified log we sought. Then we came to a low sandbar on a bend with gravel along the top. I stepped on the bar and started for the gravel when I dropped knee deep in a quicksand hole. I stood there in the hole, reached in my pocket and pulled out a brown bottle and filled it with the quicksand. I took one step to firm sand and filled

a green bottle with sand. These were for Rocks and Minerals "Sand man" as so much has been said about the different shaped grains of sand in a sandbog and I wanted to ascertain if there was a difference.

We walked on around this bend and a beautiful sight met our eyes. A large gravel bar was on each side of the creek and a low flat bar in the center of the creek. If you have ever seen a clear gravel bar on a clear creek in South Mississippi, you will have an idea of what we saw, if not, you have a treat in store. The gravel has a clean washed appearance and enough moisture is present to bring out all the rain-bow colors, Jaspers of all colors and shapes; agates of all pastel shades; water worn crystals of quartz of all shades including amethyst and citrine; petrified wood chips with brilliant color under the calcite coating; petrified coral (honeycomb) of all shades and horn coral; fossils, brecciated jaspers and agates; pebbles of chalcedony of any and all hues; oolite and some beautiful conglomerates. A rock-hounds paradise. When you leave such a place you are staggering under the load. We loaded our bags quickly and set them on the bar and pushed upstream for a couple of miles in search of the elusive pink log. We found several petrified logs, but soon determined that they were not the log, so we ambled

on. At last we came to a high clay bluff and my pulse quickened as I saw it, for if we were going to find that particular log, it would be by the bluff. As we neared the bluff Martin was in the lead. I heard his breath exhaust like a T-Model Ford and his eyes looked like a stomped-on toad frogs. I looked and saw a pink object protruding from the white sand at the foot of the bluff. We raced for it, certain that our search was over. Sure enough it was pink and petrified. We debated over the best way to get it out and decided to uncover it and see how large it was. On hands and knees we started to scratch the sand away, when I leaned against it and it moved. I pulled the thirty pound piece out of the sand and examined it. It had also been broken from a larger piece. We were pleased with this piece but felt that we had to locate the log. After lighting a cigarette we started on up the creek. At the next bar we saw where a bear had been playing. Not knowing whether he had played enough or would like to play with two tired rock-hounds, we reluctantly turned around and headed for the car and home, where we could gloat over the specimens we had found during the trip, and where I could send a rough sampling to ROCKS AND MINERALS. But! we are still determined to return to Bell Creek and renew our search for the elusive Pink Log.

GEODE HUNTING IN NEBRASKA

By AMEL PRIEST

Peru, Iowa

Recently made a one day rock collecting trip to Nebraska in search of reported blue celestite xls said to be found in the limestone quarries around Wymore along the Blue River. My cousin, Dale Travis, who is fast becoming a rockhound, accompanied me. We left Peru around four in the morning and that is pretty early even for farmers, and we had been up to chore and breakfast before that time. As we approached the Missouri River bottoms it was becoming daylight and we noted many flocks of wild ducks feeding and in the air over the cornfields.

We crossed the Missouri at Nebraska City and proceeded onward to Holmesville where we made our first stop. We learned on inquiry that there were quarries in both directions from town.

Wymore is south of Holmesville and our direction of travel so we decided to visit the north quarry first. It is about two miles northwest out of town on the east bank of the Blue River. Here we found many geodes in the lime rock but they were so thin shelled and the rock so hard it was almost impossible to remove one of the larger specimens but we col-

lected a few smaller ones. Calcite in sharply terminated dogtooth xls bright and clear were to be found. Other types of calcite xls were also observed. Also quite numerous was a curious type of milky quartz with some good terminations and the odd fact the crystals seemed to radiate out from a focal point in all directions. Also observed were nodules of a blackish chert and this was present in several of the other quarries. Leaving this quarry we proceeded to the one just south west of Holmesville on the west bank of the Blue River. Here the geodes were still thin shelled and not as numerous as at the first quarry. We did collect some clusters of faintly amethyst quartz xls with good terminations.

Proceeding on down the Blue to Wyomere we visited four different quarries south and east of town. Here we found the geodes to be thicker shelled and in more of a shaley limestone and many were weathered free and only needed to be picked up. We found the greater percent of the xled centers were iron stained and some had a secondary coating of aragonite ?? which was fluorescent. Also calcite xls that were uncoated were brightly fluorescent under the SW mineralite and would phosphoresce for a short time, probably a minute.

These geodes ran in size from a hazelnut to four or five inches in diameter. I think the largest was about seven inches. These Nebraska geodes are not quite as pretty as those from Iowa but are quite different and make a nice addition to anyone's collection. The blue xls ?? No, we didn't find any of them but still have a few geodes to crack yet and while there are geodes there is hope ?? It is with regret that I leave a good collecting ground, especially if the objective of the search has not been reached, but we had one more locality to visit.

So on our way again and this time to Odell and Diamond Hill which is located 3½ miles west and a little south of Odell, Nebr. Here south along the road you observe outcrops of reddish shale and in some of these especially southwest up the railroad track and then over the

hill to the right, numerous crystals may be picked up as they lay exposed on the surface. These Odell "Diamonds" as they are called are flat tabular barite xls of a diamond shape, quite small quarter inch and smaller, pinkish tan in color and translucent with phantom lines in many xls and occasionally one appears to have a cross at the center. Here again we were loathe to leave this interesting spot, and these curious little xls, and we couldn't help but wonder how they came to be there and to marvel that our Creator established the pattern which xls shall take, each after his own pattern.

Well all things must come to an end and the sun was fast sinking to rest behind the horizon and we were over 250 miles from home, so back to the car again and home by midnight, a long, long day but a pleasant and happy one long to be remembered. I didn't know there were geodes in Nebraska till recently and then I got to wondering if there were geodes in other states besides Iowa and Nebraska. I know there are geodes found in Texas, California, and Indiana for I have had them from there on trades. I'd be interested in hearing from collectors from other states who find geodes and to know what types of crystals they contain and perhaps make an exchange.

ROBERT F. BICKFORD

(Obituary Notice)

"I am very sorry to report that Robert F. Bickford, of Norway, Maine, died April 29, 1957.

"He was a pioneer lapidary for the state of Maine and operated a store and cutting shop for many years.

"Always pleasant to meet and one of our best authorities on Maine gems, he will be missed by the many tourists as well as all local people who knew him and depended on him."

May 16, 1957

Charles F. Marble
Buckfield, Maine



WORLD NEWS ON Mineral Occurrences

ITEMS ON NEW FINDS ARE DESIRED
PLEASE SEND THEM IN.

Abbreviations: xl=crystal
xld=crystallized

fl=fluoresces xline=crystalline
ph=phosphoresces

ALABAMA—Cherokee County is in northeastern Alabama. In the central part of Cherokee County is the little town of Centre and in Centre we have a 10-yr. old subscriber, Buddy Stewart.

Cherokee County is full of minerals, so Buddy informs us, and to prove it he sends in the following item, as per his letter of March 20, 1957:



BUDDY STEWART
10 year old rock collector
of Centre, Ala.

"Cherokee County has a wide variety of minerals ranging from those containing cobalt to iron ores. Other minerals found are bauxite, coal, mica, quartz. Limestone also occurs.

"Bauxite is found around Rock Run, in the southeastern part of the county, and was mined extensively in recent years. The spot is now marked by a water-filled hole, 200 feet deep.

"Cobalt is a chief ingredient in the A-bomb and therefore very valuable. There is said to be a vein carrying cobalt worth \$50,000, near Rock Run.

"Quartz, mica, iron ore, coal and limestone are found all over Cherokee County.

"Lots of Indian relics are found too."

A map of Cherokee County, prepared by Buddy and showing localities, was also sent in. He has a beautiful mineral collection, we have been informed, and keeps adding to it every week.

Congratulations to Buddy Stewart, Alabama's youngest mineralogist!

"Pyrite from Clay County, Alabama, comes from the town by the name of Pyriton which got its name from about 12 mines that were in operation there about 40 years ago. Beautiful specimens can be found in this locality,"—item sent in by James Miller Davis, 212 Guaranty Savings Building, Montgomery, Ala.

ARIZONA—"At Burro Creek Bridge, Hiway 93, Ariz., a rather odd rock specimen may be found. Many varieties seem to be of the "hair-line" type. Just half way between 'here' and 'there.' Quite a lot of this material will take a fair polish. Much of it will show pleasing patterns and color. Material may be found scattered all along the creek. By parking near this point and spreading out along the stream, many interesting rocks will be found readily available.

"Burro Creek Bridge, Hiway 93 (so called 'Kingman Cut-off') is in Mohave County, Arizona. First bridge, going north, is over Santa Maria River (Coconino County), next one is Burro Creek, just across the county line, in Mohave County. There is also agate, chert, flints, etc., to be found above the Santa Maria River Bridge."—item sent in by R.A. Richards, Box 44, Morristown, Ariz.

ARKANSAS—The following item, dated March 24, 1957, comes from Byron C. Marshall, 204 Central Ave., Hot Springs National Park, Ark.

"In the January-February, 1957 issue, of ROCKS AND MINERALS, under 'World news on mineral occurrences,' my friend, William Dillon, sent in some news under the Arkansas section of same. I notice that yellowish melanterite is given, as the identification of one of the 13 specimens sent in. I have looked over the literature, and it seems that melanterite is a new record for Magnet Cove, so congratulations, Bill. You see rock hounds, Bill Dillon and myself, have collected together. The 13 specimens were from Magnet Cove, Hot Spring Co., Arkansas.

"By way of interest, I might add that I do find melanterite given as an old record, from the Rabbit Foot mine, Saline County, Arkansas."

The following letter, dated May 28, 1957, comes from Mrs. Howard A. Millar, Crater of Diamonds, Murfreesboro, Ark.

"We have had rain all spring, but has made diamond hunting good. Have had more than 100 found in past few

weeks. Dallas Gem & Mineral Society, Dallas, Texas, met here on a field trip May 19, 1957 and a member, Mrs. Don MacRae of Irving, Texas found a wonderful diamond weighing over 3 carats and of the same quality as the "Star of Arkansas", found March 4, 1956. We have had lots of 2 carat size found recently."

CALIFORNIA—Some few months ago we received some interesting specimens from Galen A. Rowell, 1061 Miller Ave., Berkeley 8, Calif. The following note was sent in with them:

"Enclosed are three specimens from the San Francisco Bay Area. The first comes from the abandoned Leona Heights Pyrite Mine in Oakland, Calif. The minerals are halotrichite, copiapite, and a small amount of melanterite. Pyrite was mined here on a large scale for the manufacture of sulphuric acid. Some chalcopryite, pyrrhotite, native copper, gold and silver also occurred with the pyrite though the mine is now closed and partially caved-in, many rare sulphates can still be collected.

"The next specimen is part of an agate nodule from the Berkeley Hills that show faulting. It shows displacement of more than $\frac{1}{4}$ inch. Nature recemented it.

"The last piece is an interesting specimen of quartz crystals (I have more) that are hollow. The holes vary in size from $\frac{3}{8}$ inch to a pin point. The crystals have prism faces inside as well as outside."

The specimen from Leona Heights Pyrite Mine is earthy, pale yellowish, consisting of yellowish-white silky fibers of halotrichite, small sulphur-yellow needles of copiapite, and whitish fibrous masses of melanterite.

The agate from Berkeley Hills is a gray, sawed slab with the fault line clearly shown.

The quartz specimen is truly an interesting one. It consists of smoky quartz crystals, closely packed together and almost every crystal shows a hole or cavity running lengthwise, beginning at the tip of each crystal. It would seem that each quartz crystal had formed around

some unknown mineral and the unknown mineral has dissolved completely away, leaving behind a cavity.

"The limestone quarries at Crestmore, Riverside County, Calif., are producing a host of new and unusual minerals, in small but fine xls. I have just given my Crestmore collection to Harvard University on their pledge to make a complete mineralogical study of these quarries."—letter dated Feb. 26, 1957, from Col. Clarence M. Jenni, 3129 Chadwick Drive, Los Angeles 32, Calif."

COLORADO—"For your World News. I recently saw a very fine specimen of petzite with proustite from the Mammoth Mine at Platoro (Conejos Co.), Colo. It was collected by an engineer last year when the mine was opened. Mine is now reported closed by litigation."—letter dated March 7, 1957, from Don McCaig, Box 7703, Denver 15, Colo.

CONNECTICUT—The following items, dated May 1, 1957, were sent in by Richard Schooner, P.O. Box 215, East Hampton, Conn.

"Some of the famous old mineral localities of Haddam, Connecticut, are virtually extinct now. It's a shame, because they must have been wonderful sources of specimen material at one time . . . long ago. The chrysoberyl occurrence, first discovered in the very early years of the Nineteenth Century, was in a cellar excavation. A house was later built over the spot. I've been in the cellar, but it's completely walled up and none of the bedrock can be seen. Judging by specimens and old accounts, the chrysoberyl was abundant in pegmatite and contiguous oligoclase-rich gneiss. I have a specimen, from the attic of a nearby house, which shows yellow repeated twins of chrysoberyl in columnar greenish beryl . . . an odd association! Chlorophyllite, a green alteration of cordierite (iolite) which was said to have been obtainable in gem quality masses there, is also to be seen on the specimen, and there's a trace of fibrous sillimanite.

Gahnite and bismutite were among the other minerals of which fine specimens were formerly found, indicating that the locality must have been unusual. A number of new localities for beryl, quite a lot of it gemmy, have been discovered in Haddam during the past couple of years, but no more chrysoberyl has been uncovered.

"Within a half mile or so of the defunct chrysoberyl locality, going roughly north, is the site of the thulite occurrence which is mentioned in old publications. When a hilltop was being cleared for a house, shortly after 1920, the rock which was blasted out proved to contain a considerable amount of thulite (a pink variety of zoisite), associated with pale green epidote, labradorite, andesine, etc. Some thulite, such as the material from Norway, is of gem quality, but the Haddam thulite was too friable, due to impurities and its granular structure, for anything but attractive specimens. The house was later built at another spot, and the place is now a meadow with a little-used roadway going through it. The ledge isn't more than a foot below the surface, but collecting is out of the question. The owner of the property doesn't want the ground dug up, and I guess we can understand his viewpoint.

"A half-mile west of the chrysoberyl locality, a bed of dolomitic marble is partially exposed. . . just under the pegmatite which metamorphosed it. The marble is coarse-grained and almost pure white. While the exact contact isn't visible, a foot-thick layer of granular epidote can be seen. Thinner zones of orange and orange-red grossularite (essonite) garnet and grayish-green hornblende (pargasite, I suppose it might be called) occur. I discovered a few striated masses of columnar brown vesuvianite (idocrase). . . much like that from across the Connecticut River, at the Gillette Quarry, but of a more attractive color. In fact, some honey-yellow material was mixed with the brown; both would be gemmy if not so thoroughly shattered within. The locality

is unique in this part of Connecticut, but the owner positively refuses to allow collecting. It's the place where splendid large epidote crystals were found in quartz many years ago. Of added interest is a small cavern-like opening, too small for human passage and filled with water, going back into the ridge from the wall of a shallow pit which was blasted out for specimens by the former owner of the land.

"I haven't given directions for reaching these places because I don't suggest visiting them. Many people go looking for them, expecting to come back with fine specimens of chrysoberyl, thulite, iolite, and epidote, so I feel obliged to give this rather discouraging information about the present status of collecting in that part of Haddam.

"The recently discovered beryl localities in Haddam aren't of my finding, so I'm not free to disclose their whereabouts. Readers of this magazine may recall that I've never hesitated to reveal the sources which I've discovered personally. It's getting harder and harder to gain access to the mineral localities in this part of the state, so I sympathize with the people who don't want to publicize their finds."

DELAWARE—From Fowlers Beach, Sussex Co., Del., we saw a nice amber-brown ferruginous quartz pebble that had been found by Bob and Hazel Reynolds, 470 Stockdale Rd., RD 2, Glenarm, Md.

FLORIDA—From Cal Callaway, 13 N. Pine St., Ocala, Fla., we received a number of selenite (gypsum) crystals, loose and in groups. The crystals are colorless, with a tinge of brown. This may represent the first occurrence of selenite in Florida—at least we never heard before of it as occurring in Florida.

"Found 4 miles north of Ocala, Marion Co., Fla."—on label.

GEORGIA—In the Nov-Dec 1956 R&M, we described a most spectacular mineral specimen of bright brassy-yellow pyrites on brown-black lignite. The specimen was sent us by Natural Gems, 795 E. Currahee St., Toccoa, Ga. (Bob Daniel,

prop.). Since then we have received more specimens of these attractive combinations and they were sent us by Gilbert W. Withers, 1405 West Paces Ferry Road, Atlanta 5, Ga. Here is Mr. Withers letter, dated Jan. 12, 1957.

"This material is, indeed, the same as that which I supply to Natural Gems of Toccoa, Georgia, and originates in the upper crustaceous formations located in Chatahoochee County near Columbus, Georgia. In fact, it was found by me in Randall Creek which bisects the great Fort Benning army post. The outside of the logs when exposed in the creek bed is generally solid black solidified wood gradually changing to lignite as it approaches the center of the log. The pyrite clusters and other deposits fill what was apparently the heart of the log at one time.

"Some extremely beautiful crystallized specimens are sometimes encountered. I have been informed by Dr. Furcron, of the State Geological Department, that all of this wood is heavily impregnated with germanium."

IDAHO—From the Eagle Mine, Mineral Hill District, Lemhi Co., Idaho, we have an attractive specimen that was sent in by G. Elmo Shoup, P.O. Box 756, Salmon, Idaho. The specimen consists of blue azurite and green malachite crusts with brassy yellow pyrite on dark smoky quartz.

ILLINOIS—"Here is a specimen I found on the grounds of Lakeview Jr. Sr. High School in Decatur (Macon Co.), Ill. This specimen came off of a pegmatite boulder."—letter dated April 23, 1957, from Richard D. Armstrong, 1036 N. 33rd St., Decatur, Ill.

The specimen consists of small, black tourmaline xls with silvery muscovite plates in flesh-colored microcline and smoky quartz.

INDIANA—"Around Lafayette (Tippecanoe Co.), Ind., there have been found pieces of native copper (rounded nuggets). I know of three, one of which

I found myself, ranging in size from about one ounce to 30 pounds (in the Purdue University collection). They are almost certainly glacial in origin having been carried down from Michigan and deposited in moraines here."—letter dated Feb. 1, 1957, from Edward Rush-ton, 730 Bexley Road, West Lafayette, Ind.

IOWA—Rattleboxes appear to be very common as we have seen specimens from many states. The latest rattlebox brought to our attention was sent in by Amel Priest, Peru, Iowa.

"Found 4 miles straight north of Murray, Clarke Co., Iowa."—on label.

A rattlebox is a limonite geode containing loose sand which when shaken makes a rattling sound. The specimen from Murray is brown in color and $1\frac{1}{2}$ x $1\frac{1}{2}$ inches in size.

KANSAS—"I am sending you some mineral specimens picked up last summer on a hillside about two miles east of Dentonia, Jewell Co., Kansas. There were hundreds of rather poor selenite crystals lying around which had been washed out of the hill, also some which I think are calcites."—letter dated May 4, 1957, from Leigh P. Jerrard, 522 Willow Road, Winnetka, Ill.

Three different minerals were present in the assortment sent in, one was aragonite as thick, yellow incrustations on dark gray limestone. The second was calcite, in dark brown, compact fibrous radiating masses with dark gray limestone. Some calcites are translucent on thin edges and all fl. orange under long wave. The third and last specimen was a colorless, platy selenite xl (1x2 inches in size).

KENTUCKY—"The attached clipping is from the Owenton, Owen Co., Ky., weekly NEWS HERALD of April 4, 1957. Sometime ago I sent you samples of minerals of that locality—galena, barite and calcite."—letter dated April 5, 1957, from Charles Johnson, 307 W. 4th St., Frankfort, Ky.

The specimens sent in by Mr. John-

son came from the abandoned lead mine near Gratz, Owen Co., Ky. We do hope that this mine may soon be reopened, at least the following clipping gives encouragement to this hope. Here is the clipping:

CORPORATION FORMED TO EXPLORE OWEN COUNTY MINERALS

Special To The News-Herald

FRANKFORT — A corporation to promote the exploration of minerals and barites in Owen county, capitalized at \$400,000, was granted a charter last week by the secretary of state.

The National Baroid Corporation, Owenton, was incorporated by three Washington residents and three Cincinnatians. The capital shares of the concern total 5,000 valued at \$80 a share.

Although no definite information is available, it is believed explorations of the new corporation will center around the Gratz community where about a year ago another group made tests for minerals and leased some property. It is understood representatives of the new group are now in the county leasing farms for mineral rights.

LOUISIANA—From a huge gravel pit near Monroe, Ouachita Parish, La., we have a good size gray pitted chalcedony pebble that was sent in by Bill Hurley, P.O. Box 2673, Monroe, La.

MAINE—Dark reddish jasper pebbles, some banded with smoky quartz, have been found on Foster's Jasper Beach, 11 miles south of Machias, Washington Co., Me.

MARYLAND—Zelma H. Wright, Jr., 3105 Dundalk Ave., Baltimore 22, Md., sent in a specimen consisting of a mass of tiny dark brown tourmaline xls (so dark they look black) in massive milky quartz, some of the xls are scattered in the quartz and appear as very slender, striated xls (also dark brown).

"Found in a vein on Highway #1, north of Belair, near Deer Creek, Harford Co., Md."—on label.

MASSACHUSETTS—"Albert Sebela, 68 Sprague Street, West Springfield, Mass., a past president of the Conn. Valley Mineral Club, has collected the following minerals in the four-mile stretch of the Massachusetts Turnpike between Route 20 at Woronoco and Russell Stage Road: actinolite, apatite, autunite, bertandite, beryl, biotite, calcite, chalcopyrite, chlorite, columbite, epidote, fluorite, garnet, graphite, hornblende, ilmenite, kaolinite, manganapatite, manganese dendrites, microcline, montmorillonite, muscovite, oligoclase, pyrite, pyrrhotite, quartz, stilbite, tourmaline and tremolite."—item, dated Feb. 25, 1957, sent in by Mrs. Lawrence W. Schoppee, 9, Greenbrier St., Springfield 8, Mass.

MICHIGAN—The following item was sent in by John F. Mihelcic, 16543 Appoline, Detroit 35, Mich.

"Up to the present time, the new Algomah mine is the only copper mine in Michigan that is operating on chalcocite, chrysocolla, and malachite ore. This mine is located just off route 35 near Mass City in Ontonagon County."

MINNESOTA—"Under separate cover I am sending you several small specimens that I found while touring along the north shore of Lake Superior in a road cut on Highway US 61 near Grand Marais (Cook Co.), Minn. Would appreciate very much their identification.

"Have been a subscriber for R & M for quite sometime and certainly enjoy it immensely."—letter dated April 11, 1957, from Alex Pezdir, R1, Box 330, Kenosha, Wisc.

The specimens are reddish-brown radiated stilbites.

MISSISSIPPI—Dark gray, banded agate pebbles have been found in Bell Creek, Harrison Co., Miss. about 18 miles N.W. of Gulfport, by J.S. Locke, 39-48th St., Gulfport, Miss.

MISSOURI—"During the past year field trips far from home were not often made, so my attention was turned to a place nearby, viz., the grand old river

Mississippi. For the past two or three years there has been a shortage of rainfall over most of the watershed traversed by the Mississippi and Missouri river systems which of course causes the river to reach very low water levels, as of this date the water guage here has a reading of minus 4.6 ft., under such conditions long stretches of river bed are exposed to view, when under normal conditions are never seen. The strata exposed alternates from shale to limestone and the strike and dip are such as to cause the current to make the stream very uneven in many places. These depressions are filled with gravel and boulders some weighing up to hundreds of pounds and almost any type of material is represented here for one can just picture the vast territory drained by the Mississippi and Missouri rivers and tributary streams some reaching far to the northwest in the region of the Rocky Mts.

"During the past several months either above or below the Chain of Rocks Bridge over the Mississippi River which is crossed here (in St. Louis) by US Hiwy 66, the writer has found some very nice quartz geodes, 48 in all. Many of these geodes have very beautiful crystals and a few of the larger ones are lined with botryoidal chalcedony showing nice banding along the broken edges. One specimen, measuring 10 inches, has a lining of superb clear crystals as fine as ever seen. Some have the crystals stained by oxides causing a variety of colors. It is probable that most of these geodes were brought down the river from tributary streams in the southeastern Iowa area, as that is a famous location for fine quartz geodes.

"Many other interesting items have been picked up by the writer in these gravel deposits, such as an occasional agate nodule. Several pieces of petrified wood that show nice color when ground and polished. An almost unlimited variety of granite and other igneous pebbles show up in all these gravel deposits.

"Several pieces of jasper and banded chert also have been found. Many marcasite nodules may be picked up, some of

them almost perfect spheres, when broken the nodules show the radiated structure common to this mineral, the centers are bright in color and look more like pyrite. No doubt these nodules have been weathered out of shale deposits and have eventually found their way into the river bed. Both hematite and limonite are found here. Some two dozen septaria have been collected and of all sizes from 3 to 12 inches. When sawed or broken open, the calcite filling the cracks in the septaria show a beautiful variety of colors. When broken instead of sawed open, the beautiful rhombic form of the calcite crystals show up nicely.

"To anyone interested in this area, any gravel deposit along the Mississippi River for several miles below its junction with the Missouri River, may yield something interesting.

"Fossil collecting is good in the Webster Groves area southwest of St. Louis, specifically along Hiway 66 or Watson Road; building excavations and grading projects are the best places to look. Corals and brachiopods of several varieties are abundant.

Some real nice quartz geodes are in my collection from this same location. Some of these geodes show a bright red lining caused by iron oxide that has seeped through tiny openings. This color in contrast with the clear protruding quartz crystals make striking specimens.

"I am looking forward to spring and summer when field trips may be made more often."—letter dated Jan. 20, 1957, from John A. Allen, 1256 McLaren Ave., St. Louis 15, Mo.

MONTANA—The following item, dated May 12, 1957 was sent in by Gerald Navratil, Bonner Ferry Ranger Station, Box 119, Bonners Ferry, Idaho (home in Hastings on Hudson, N.Y.).

"At Libby (Lincoln Co.), Montana, at the Zonolite mine on Rainy Creek, about 7 miles northeast of Libby, in the open pit Zonolite mine on Vermiculite Mountain, large specimens of massive galena were seen being dumped from

dump trucks carrying waste material to the dumps. Specimens of chrysocolla filling thin fractures and fissures were collected on the east side of the pit in the fall of 1955. Not of gem quality, certainly, but very showy specimens for the district."

NEBRASKA—Small barite xls occur in large numbers in the mottled clays exposed about 4 miles southwest of Odell, Gage Co., Nebr. This barite occurs as flat, thin rhomboids, colorless to pink to brownish colored xls, 1/8 to 1/4 inches in diameter. When viewed by transmitted light many show the so-called phantom figures. About 18 of these little xls have been sent us by Amel Priest, Peru, Iowa, and they were labelled-Odell "diamonds" (because they are diamond-shaped).

NEVADA—"With much pleasure I read your "World News on Mineral Occurrences" in the Jan-Feb 1957, R&M. It is very interesting to compare notes with your readers about minerals and gems and fossils to look for and where to look for them.

"My home is in Carson City, Nevada. Prior to my enlisting in the USAF, I spent 9 years actively engaged in the pursuit of crystals, petrified wood, fossils—rocks in general.

"Here briefly I would like to rattle off some names and places where I have found good specimens of crystals, petrified wood (with associated minerals) and fossils.

"Carson City (Ormsby Co.), Nev. Copper-washed quartz and/or chalcedony with malachite prevailing. Azure hues can be found with patient looking. Pyrite crystals abundant at the same mine located approximately 2 1/2 miles due west of Carson City on the Kings Canyon Road."—letter dated April 25, 1957, from A/2c Lawrence E. Wright, 55 PMS, Box 119, Forbes AFB, Kansas. (To be continued).

NEW HAMPSHIRE—Nice Specimens of rose quartz have been found in the pegmatite quarries at Acworth, Sullivan Co., N. H.

NEW JERSEY—"I am sending you a specimen which I believe is a concretion of some sort. These objects I got from the muck which was brought up from Lincoln Tunnel, 3rd Bore. I hope you will accept it. I have some in my mineral collection and those who have seen them remark at the queer shapes especially one which looks like a bone. I have more if anyone cares to make an exchange."—letter dated Feb. 11, 1957, from Joseph Barr, 419-33rd St., Union City, N. J.

Two specimens were received. One is 4 inches long and looks like a dumbbell, the other is 8 inches long (weighs 1 lb.) and looks like a huge lizard, minus legs. The specimens are claystone concretions, gray in color, and coated with hundreds of tiny white seashells (some loosely attached but most are imbedded).

The Lincoln Tunnel is a vehicular tunnel under the Hudson River connecting New York City, N.Y., and Weehawken, N. J.

A second letter from Mr. Barr, and dated March 16, 1957, reads:

"Thank you for the information you gave me about the claystone concretions, and I notice you had the same thought in mind about which side of the river they came from. I'd say you are right—the New Jersey side.

"There is also plenty of schist with garnets (small ones), feldspars, jaspers and other minerals, if you should care for samples I will gladly send them. (Yes, be glad to have them—if they come from the tunnel—Editor).

"If any readers care to know where the tunnel dump is located, here are directions to reach it (it is in Secaucus, N.J.). First reach the Homestead R.R. crossing then head westerly for Secaucus on right hand side is a large city dump. Parallel to this dump on road you can see the piles of rock and muck from the tunnel. You can't miss the place. Although the tunnel dump is full of common rock, some pretty nice minerals can be found in it."

NEW MEXICO—A variety of vanadinite called endlicheite is found in brilliant orange-or lemon-yellow xls at Lake Valley, Sierra Co., N. Mexico.

NEW YORK—Harold J. Lienemann, Box 42, Gouverneur, N.Y., sent in this item, dated May 18, 1957.

"An occurrence of chalcodite has been found in the town of Edwards, St. Lawrence Co., N.Y., by Jerry Lapham of Glens Falls, N.Y. Specimens found are said to be equal to or better than those from the Sterling Iron Mine at Antwerp, Jefferson Co., N.Y.—same color as at Sterling."

The chalcodite from the Sterling mine occurred in velvety brown masses.

NORTH CAROLINA—White, striated masses of andesite have been found at the corundum mines on Corundum Hill, Cullasagee, Macon Co., N.C.

NORTH DAKOTA—"In response to your request for North Dakota items for "World News Column", I am sending you a few fossils resembling some kind of seeds. A number of them were chiseled out of a big cigar-shaped sandstone rock in southwest of Regent, North Dakota, in Hettinger County. I hope you receive these in time for the next issue of R&M.

"I enjoy R&M very much and have been a subscriber for many years when living in Minnesota, South Dakota, North Dakota, and now in Iowa.

"Have some other North Dakota items which I will send you later, also some from South Dakota and Iowa."—letter dated May 9, 1957, from Geo. M. Lindley, Tripoli, Iowa.

Several small, loose, dark gray (almost black) fossil seeds were received.

OHIO—A small mass of lustrous, lead-gray specular hematite was received recently from L.F. Grashel, 1702 Highland Ave., Portsmouth, Ohio.

"Found about 6 miles west of Portsmouth, Scioto Co., Ohio."—on label.

OKLAHOMA—Frank R. Lytle, 411 N.E. 9th St., Oklahoma City 4, Okla., has sent in a number of interesting clippings on his state. Here is one which should have been printed sooner—other items crowded it out. The clipping is taken from the DAILY OKLAHOMAN, Oklahoma City, Okla. (Sun. Jan. 27, 1957), and is titled "Rock City beauty is hidden," by R.G.M. It is a full page, illustrated article and part of it reads:

"A FIVE YEAR DREAM of Oklahoma sightseeing has come true for RGM, because we have visited Rock City in Pushmataha county 10 miles west of Clayton. This region is very mountainous, but on top of the mountains, for a stretch of two miles or more, one of the most amazing fields of rock formations exists, awaiting exploration by outdoor lovers and study by geologists, rock collectors and camera fans.

"We first learned about Rock City—nobody knows who named it, or when—five years ago. We had been within a few miles of it several times but never, until last week, did we activate the urge and line up trained guidance to visit the place.

"Rock City is 100 percent undeveloped to receive picnickers and tourists. Only the most sure-footed and strong-hearted would attempt it. The last two miles of the logging and pulp-wooding trails leading to it are rough and narrow in the extreme, and many spots in the trail are uninviting to motor travel. Our jeep finally made it.

"Mountain-sized rocks that are shaped like capitol domes, church spirals, skyscrapers, towering clouds, lighthouses, barns, mansions and theaters—round tops, flat tops, ridged with challenging and spooky steps, holes and crags—you find them all in this Oklahoma rock paradise.

"These rocks may be 100 million or 900 million years old. Some day the geologists may know for sure. As far as the oldest residents in the area know, no masters or students in the field of geology have ever visited Rock City.

In walking among these amazing rocks for two hours we saw no sign that any-

body had ever had a picnic there. Only timber cutters and range cattle operators have had occasion to see these rocks.

"As you stand beside the rocks you are more than likely being eyed by deer, squirrels, coons and other animals that live in the hills and forest. Birds of many kinds, even eagles, will be observing your movements. At dusk, whip-poor-wills and hoot owls will begin calling to you. The wild huckleberry crop stays ripe and full of flavor all winter here. Hickory nuts are all around."

"If this Rock City were in or near Oklahoma City or any other populous center it would really be a show place, an amusement center, a sightseeing extravaganza. There would be foot trails and bridle paths all over the rock-filled spread. There would be cable-car rides from one peak to another. There would be fortune tellers in the caves under the rocks. The place would be equipped with everything to catch the merry-maker's eye and touch his pocketbook."

OREGON—Grayish, common opal masses have been found around Baker City, Baker Co., Ore.

PENNSYLVANIA—The following letter, dated April 25, 1957, comes from Warner Sizemore, 404 Lancaster Pike, Malvern, Pa.

"Enclosed you will find some samples of sheet mica. It was mined in Chester County, Penn., from an old mine no longer worked. I have several hundred pounds of it.

"The mica (muscovite) comes from an abandoned mine on the property of Mr. Peter Tessallog in the Rock Run district about a mile north of Coatesville, Penn. Finding the mine would not be too difficult with the aid of local residents. The new Coatesville bypass will go within a few feet of it. As far as I can ascertain the mine has not been worked in the last fifty to seventy years except for chicken gravel.

"I have not been able to find any other history. Good books of mica are still plentiful, but not of commercial quality as I have sent many specimens to buyers.

"There is also another mine nearby which local residents speak of as the 'old nickel mine' sometimes as the 'old lead mine' but which is really an iron mine, as far as I can determine. Soon I will send samples of this mine, too, which includes arsenopyrite. This mine has not been worked in the memory of the old timers."

Two large 4x4 sheets of the whitish muscovite, both mounted nicely on white cardboard, were received. They are good specimens. Mr. Sizemore has a classified ad in this issue, offering the mica for sale. Look it up!

RHODE ISLAND—Tim Moses, Bagy Wrinkle Cove, Warren, R.I., sent in an odd but attractive specimen. It is a very pale purple, xline, finely banded fluorite with quartz and comes from Lime Rock, Providence Co., R.I. Should take a nice polish.

SOUTH CAROLINA—Brassy-yellow cubes of pyrite have been found in schists and slates at the old abandoned Ophir gold mine at West Springs, Union Co., S.C.

SOUTH DAKOTA—Mrs. Ed. Olson, Beresford, S.D., sent in an interesting sandstone specimen. It is a dark reddish micaceous sandstone—the tiny silvery specks in it are muscovite (mica), some tiny golden-yellow pyrite specks are also present.

"Silvery specks in red sandstone—from old silver mine near Garretson, Minnehaha Co., S.D. In 1886, 25 people filed claims—one shaft is still visible. Ore not rich enough to satisfy. Pioneer crossing near there on same farm shows wagon wheel ruts."—on label.

TENNESSEE—The following item was sent in by Carl Seyfert, Jr., Box 1803, Vanderbilt University, Nashville, Tenn.

"Geodes, large ones, are found 5 miles west of Woodbury, Cannon Co., Tenn., on road to Knoxville. Some geodes contain smoky quartz xls, some contain agate, and some are solid."

TEXAS—"I am sending you some small samples of petrified wood and a sample order of slabs advertised. These—and I have a good deal of the wood—are from the famed Coatula formation passing from Louisiana westward and southward to the Rio Grande. It has been written (Hugh Leiper in *LAPIDARY JOURNAL*, April 1952, p. 10) that the material from around Old Moulton, Texas, was the hardest and finest of all. All of my material is from Old Moulton, Texas."—letter dated May 11, 1957, from Edward Helpenstell, 1429 Sandpiper Dr., Bellaire, Texas.

Some very nice sawed slabs of the petrified wood, gray to dark gray in color, were received from Mr. Helpenstell. It comes from Old Moulton (Moulton), Lavaca Co., Texas, and is typical material from his large stock. See Mr. Helpenstell's ad in the classified section of this issue.

UTAH—A letter, dated Feb. 23, 1957 from C.K. Henning, Pegram, Idaho, tells of a recent visit to the world famous topaz locality at Topaz Mt., in the Thomas Range, Juab Co., Utah, where beautiful wine-colored topaz xls are found in white rhyolite. Part of the letter reads:

"There are still plenty of beautiful golden topaz crystals at Topaz Mt., Utah, if you are prepared to work for them, that is, just keep breaking the rocks. I use a large pick to split out the rock sections, then break them with a small sledge. The best crystals are found in the more solid rhyolite."

VERMONT—Robert I. Gilman, Box 453, White River Jct., Vt., was a recent visitor at the office of R&M. Before leaving he told us that nice calcite xl clusters, colorless to white, have been found recently at the Elizabeth Copper Mine in South Strafford, Orange Co. Vt.

VIRGINIA—The following item, dated March 10, 1957, was sent in by Allison U. Cusick, RD #1, Unionport, Ohio.

"Here is a little item you might like to have."

"When I was last in Virginia, I visited some friends that live in a little town called McGaheysville (Rockingham Co.), near Harrisonville. They showed me and gave me a rock which they had dug up on the site of a cartridge factory operated during the Civil War. This factory was on their property. I took the specimen home and found it to be a fibrous, black coating of goethite on limestone and siderite mixture. This piece measures 6x7 inches. This is the only piece of goethite ever found in the area and the only one that I've seen from Virginia."

WASHINGTON—Recently we received the following specimen from Robert J. Smith, Rt. 2, Box 190, Puyallup, Wash.

Pyrite. Lustrous, small, brassy-yellow masses on dark gray labradorite.

"Comes from near Carbon Glacier on Mt. Rainier, Pierce Co., Wash."—on label.

WEST VIRGINIA—Smokehole Caverns is a larger commercially developed cave in southwestern Grant County, W. Va. It is on the north side of West Virginia Highway 28, 300 feet east of Jordan Run. The main room in this cave has been called "The Room of a Million Stalactities", due to the abundance of beautiful stalactites. Smokehole Caverns was opened to the public on May 30, 1940.

WISCONSIN—"As spring has finally arrived, we were able to make a trip to the zinc mines at Mineral Point (Iowa Co.), Wisc. We arrived at a most opportune time. The night shift had just blasted into a large vug containing an unusual formation of calcite crystals on sphalerite. We were able to get several specimens—one is sent you.

"Zinc is no longer made at Mineral Point and as a result smithsonite, or dry-bone as it is locally called, is getting scarce. So prospecting among the retired miners we were able to locate a dump that was abandoned. Here we found barite, smithsonite, marcasite and iridescent

pyrite. A smithsonite (dry-bone) specimen is also sent you.

"I hope this letter will be of some interest to readers of R&M."—letter dated May 15, 1957, from Lyle DeRusha, RR #4, Chippewa Falls, Wisc.

Two large specimens were sent in by Mr. DeRusha and both from Mineral Point. One was a 2 x 7 inch, black, drusy sphalerite on the center of which was perched a 2 inch whitish calcite crystal—a beautiful specimen. The other was a 4 x 5 inch cellular, brown dry-bone.

Dry-bone is a miner's term for an earthy, friable smithsonite.

WYOMING—"I am sending a specimen of uranophane I found near Shawnee, Converse Co., Wyo. This comes in vein form. The specimen fl. red and green (short wave). What cause this fl.?

"Would like to have visiting rock-hounds stop."—letter dated May 15, 1957, from J. A. Duguid, South on highway 85, Lusk, Wyo.

The uranophane is a yellow earthy coating on gray chaledony. The green fl. is due to colorless hyalite (opal) coating part of the specimen. The mineral causing the red fl. could not be determined as it is coated by the uranophane—uranophane itself is not fl.

ALASKA—Frank Waskey, Oakville, Wash., sent in an interesting specimen, calcite pseudo after glauberite—a grayish mass of platy xls.

"One of the many crystal forms of calcite pseudo after glauberite. From Sarichef Island, Alaska—Long. 166°, Lat. 66° - 15'. This particular crystal form makes the aggregate look like a bunch of organisms."—on label.

ANTARCTICA—We are indebted to Fred W. Schmeltz, 603 Fairlawn Pkwy, Warren Point, N.J., for a clipping taken from the NEW YORK TIMES, Mon. April 29, 1957. It is titled "Vein of high-quality manganese found near Antarctic camp site" and was written by Walter

Sullivan. Part of the clipping reads:

"A small vein of manganese silicate has been found in Antarctica. So far as can be determined, this is the first discovery of high-grade ore on that continent.

"The ore is in a rare form, known as tephroite, and was found on Clark Peninsula in Wilkes Land. The peninsula was visited for the first time in January of this year .

"According to available records tephroite has been discovered in only three other places: Franklin, N.J.; Varmland, Sweden; and in the French Pyrenees.

"Dr. Brian H. Mason, Curator of Geology and Mineralogy at the American Museum of Natural History, who identified the specimens, notes that in both Sweden and New Jersey tephroite is found in conjunction with extensive and valuable mineral deposits."

BURMA—In Burma a new mineral, painite, has been found and it has been described by G. F. Claringbull, Max H. Hey, and C. J. Payne in the March 1957 issue of *THE MINERALOGICAL MAGAZINE* (Mineralogical Society, British Museum of Natural History, London S.W. 7, England, pp. 420-425). In the summary on p. 420 the authors state: A singly terminated transparent, deep-garnet-red crystal originally weighing 1.7g. from a gem gravel from Mogok, Burma, proves to be a new mineral. The name painite is proposed in honor of A.C.D. Pain who recognized the unusual nature of the crystal."

How the mineral happened to be discovered is told in the first paragraph of the authors' paper.

"In 1952 Mr. A.C.D. Pain sent to London a deep-garnet-red crystal weighing 1.7g. which had been found in one of the small ruby mines near Ohngaing village, Mogok, Upper Burma. The crystal after passing through several hands came for examination to the London Chamber of Commerce Laboratory where its optical properties and density were accurately measured. As it was found impossible to

identify the mineral from these constants it was passed to the British Museum Department of Mineralogy for further tests. Subsequent work has shown that the mineral is new to science and it has been named painite after Mr. A.C.D. Pain, the enthusiastic gem collector who first recognized the unusual nature of the crystal, agreed to a portion being sawn from the fractured base for chemical and x-ray work and subsequently presented the crystal to the British Museum (Natural History) where it is registered under the number B.M. 1954, 192. The present weight of the crystal is 1.48 g."

CAMBODIA—Cambodia is one of the Indo-Chinese Associated States in southeastern Asia. Three countries make up the states, the other two are Viet Nam and Laos.

From Cambodia we have a dozen small zircons, brownish gemmy pebbles (not of facet quality nor are they fl.) that come from the zircon mines one mile east of Bokeo. The following letter accompanied the zircons.

"In the bottle marked "B" is sand from a small stream 15 miles east of Bokeo. Stung Treng Province, Cambodia (13° 40' N 107° 15' E). We were in the area searching for some old reported copper deposits which we did not find. Also in the same container are some zircons which I got at the zircon mines 1 mile east of Bokeo. Some of them have fairly good natural faces. The zircons are found in a red clay (weathered basalt)"—letter dated April 8, 1957, from Lt. Col. William A. Lucas, Office of the Army Attache, Navy 150 (Box C), F.P.O., San Francisco, Calif.

We are indebted to Neal Guffey, Guffey Institute and Lapidary, 3001 M. St., N.W., Washington 7, D.C., for Col. Lucas' name and address.

KOREA—"Today I mailed you a specimen that I found here in Seoul. It comes from Black Mountain, Seoul, Korea. This Sunday I am going back to

the locality and try to collect some really nice specimens."—letter dated May 3, 1957, from Mrs. Sylvia Czayo, U. S. Embassy, Seoul, Korea, APO 301, San Francisco, Calif.

The specimen received is a very nice one consisting of a smoky quartz xl, with tiny whitish muscovite xls, on flesh-colored microcline.

See March-April 1957, R&M, p. 136, for a most interesting item on Mrs. Czayo's experiences in collecting in Korea.

SCOTLAND—"Herewith the note about the agatized coral from Dunure, Ayrshire, Scotland, sent at last to me by Mr. William Hood, Deputy Director Museum and Art Galleries, Paisley, Scotland. Mr. Hood is a well known collector of fossils, specializing in corals.

"Nothing new to report, but I did make a trip with Hugh McCallum to Dunoon, Scotland, to run in his new car. We made only one halt on the way, to try the sand from one river to see if it was auriferous, as some reports suggest, but we got no colour in the samples tested.

"Well, I'm off, have to do a little work to enable us to eat occasionally."—letter dated March 28, 1957, from Sandy Ramsay, 1015 Aikenhead Road, Kings Park, Glasgow S4, Scotland.

Here is the note, sent in by Sandy, and it is titled, "Rare Silicified Coral found among Agate Pebbles at Dunure, Scotland."

"The Dunure Shore, south of Ayr, is a well known hunting ground for Scottish agates. The dominant colours of the agates are red and white. During June, 1956, Mr. Sinclair noticed among the many specimens that he had collected, one showing some rather unusual features. He showed this to William Hood of Paisley Museum, who identified it as a compound coral from the Lower Carboniferous (Mississippian). The species, *Thysanophyllum argylli*, Thomson, had only been hitherto known by a single specimen, found many miles away, at

the other side of the Clyde estuary near the Mull of Kintyre, also as drift, found by James Thomson in 1888. The Dunure coral bears colours of striking resemblance to the local agates—red and white. The agates are derived from the lavas which are of Devonian age. The fossil is certainly an unusual coral, found in an unusual locality, and it would probably require the work of submarine geologists to find the original location."

Here is a little note about Sandy that was sent to the Editor of R&M by Mrs. Robert Barker of E. Lynn, Mass., who with her husband, Lt. Robert Barker of the U.S. Air Force, had been stationed in England for many months. The note is dated March 24, 1957, and reads:

"We had a very short but delightful visit with your good friend, Mr. Ramsay, on New Year's Eve afternoon while we were in Scotland on a short leave. He is, as you have already guessed, one of the most generous, charming gentlemen that it has been our pleasure to meet in this country. I certainly hope that you will be able to take him up on his invitation to visit him in Scotland and go on some trips with him. I am sure you would have a perfectly marvelous time."

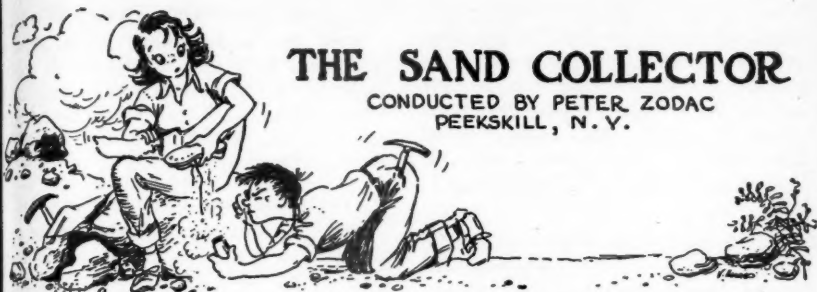
Looking Back Twenty-Five Years Ago in ROCKS AND MINERALS SEPTEMBER 1932 ISSUE

GEYSERS, by Eugene W. Blank. An intensely interesting article on one of nature's fascinating phenomena—a spring from which hot water and steam, and in some cases mud, are intermittently, periodically, and explosively thrown vertically, like a fountain, to a considerable height. pp. 85-87.

PAPER FOR MUSEUM LABELS, by L. J. Spencer, M.A., Sc.D., F.R.S. Dr. Spencer, of the Mineral Department, British Museum, London, England, points out some qualifications of paper for mineral labels. "They should be such that they will last as long as the specimens themselves—and as long as the museum is to last, and so preserve the historical details for the benefit of our successors."

THE SAND COLLECTOR

CONDUCTED BY PETER ZODAC
PEEKSKILL, N. Y.



Quartz sand from De Queen, Ark.

Glen E. Kiser, Douglass, Kans., collected this sand which is fine grained and light brown in color. All light brown quartz (quartz stained brown by clay).

"From Hwy. 70, west of De Queen (Sevier Co.), Arkansas, about $1\frac{1}{2}$ miles east of the Oklahoma line."—on label.

Garnet sand from Dana Point, Calif.

Dana Point, in southern Orange Co., Calif., projects into the Pacific Ocean. From the locality we have a sand sample that was sent in by Geo. G. Oswell, 233 E. Amerige Ave., Fullerton, Calif.

The sample is a fine grained pinkish sand consisting chiefly of pink to red garnet with small amounts of colorless quartz, black lustrous magnetite, and greenish epidote.

Creek sand from Elbert and Lincoln Counties, Colo.

In Colorado, U.S. 24 crosses Big Sand Creek which is about 150 feet wide. In about the center of the bridge is a county line—Lincoln County to the north and Elbert County to the south. About 450 feet north of the county line, U.S. 24 joins U.S. 40 and U.S. 287.

On June 24, 1952, when the conductor of this department was passing through the area, a stop was made at the bridge to collect a sand sample—two in fact (one from each county). The creek was absolutely dry and full of sand from one bank to the other. The sand from Elbert County was coarse grained and of a brownish-gray color. It consisted chiefly of quartz (colorless, smoky, milky), and pinkish feldspar with tiny amounts of silvery muscovite and very tiny amount of black magnetite.

On crossing over to the Lincoln side of the creek, the conductor was dumbfounded to find the creek bottom full of small ant hills—imagine that, a creek bed full of ant hills! The creek bed must have been dry for many, many months! The sand varied a little—it was still coarse grained but its color was gray and it too consisted chiefly of quartz (colorless and smoky) and pinkish feldspar with a tiny amount of black magnetite but no muscovite was present.

Quartz sand from Coal City, Ill.

"I am sending a sample of sand under separate cover. It was taken from a road bank 3 miles north of Coal City, Grundy Co., Ill., and growing in it were a couple beds of lupines in blossom.

"I enjoy your column, the Sand Collector."—letter dated May 25, 1957, from Robert D. Beale, RR 3, Odell, Ill.

The sample is a fine grained, brown sand. It consists chiefly of brownish quartz (some transparent) with some pinkish feldspar and a tiny amount of black magnetite.

Zircon sand from Brigantine Beach, N. J.

"Enclosed find small sample of sand, particularly rich in variety of minerals, which might or might not be of some interest to you. This material was obtained by Mr. Paul Seel (3 Cynwyd Road, Bala Cynwyd, Pa.), member of our society (Mineralogical Society of Pennsylvania). He obtained this material from Brigantine Beach which lies across Absecon Inlet from Atlantic City, N. J. (north). Paul tells me that he just wanted some sand for use in his garden and gathered it without any idea of its constituents.

When he got it home he wondered at the black shining particles so put some under his microscope and was astonished at what he saw. Thinking it might have some appeal to you, I suggested sending some for your examination."—letter dated May 22, 1957, from Harry W. Trudell, 1309 Highland Ave., Abington, Pa.

This sample, from Brigantine Beach, Atlantic Co., N. J., is a dark gray, fine grained sand. It consists chiefly of garnet (pink to dark red) with some black ilmenite, colorless quartz, and considerable colorless zircon that fl. orange. It is the best zircon sand we ever saw from New Jersey.

Glass sand from Mill Creek, Okla.

This is a fine grained, gray sand consisting entirely of colorless quartz. "From Mill Creek (Johnston Co.), Okla."—on label of sand that was sent in by Glen E. Kiser, Douglass, Kans.

Pyrite sand from New Pine Creek, Ore.

We recently ran across this sand sample that was sent in a few years ago by an anonymous subscriber residing in New Pine Creek, Lake Co., Ore. The sample is a fine grained, pale brassy-yellow sand consisting chiefly of tiny brassy-yellow xls of pyrite (pyritohedrons) plus a little white quartz.

Chalcedony sand from Van Horn, Tex.

"I am sending you a sample of sand which I picked up when returning from a trip to Louisiana. This sand comes from a place about 3 miles east of Van Horn (Culberson Co.), Texas, just off Highway US 80"—letter dated May 8, 1957, from Pvt. William R. Butts, 193 Sig. Co., Fort Huachuca, Ariz.

The sample is a medium grained, reddish-brown sand. It consists of gray chalcedony, some colorless quartz, pinkish feldspar, and a small amount of black magnetite. Some reddish clay, which gives the sand its color, is also present.

Quartz sand from Vernal, Utah

Some months ago Amel Priest, Peru, Iowa, sent in a sand sample which was collected in the Uintah Mts., north of Vernal, Uintah Co., Utah. This is a fine grained, yellow sand and consists entirely of yellowish quartz.

River sand from Vantage, Wash.

Some few months ago we received a sand sample that was sent in by C. R. Davis, 9001 Mill Plain Road, Vancouver, Wash. The sample is a fine grained, black sand consisting chiefly of black, lustrous magnetite, pinkish garnet, and colorless quartz with minor amounts of green epidote and colorless zircon that fl. orange.

"From Columbia River at Vantage (Kittitas Co.), Wash."—on label.

*Chlorite and gold sands from
Palmer, Alaska*

"Personally I can't think why anyone would collect sands, but it seems to be a popular hobby so I'll send some.

"I am sending some sand which is green, taken from a water well 14 feet deep that is situated 3 miles from Palmer, Alaska, on the Anchorage highway. I saved it because it was a bright green color when taken from the well.

"Also some sand from the bottom of our sand washer. We own a gravel and ready mix plant here in Palmer. My husband saves this sand because there is gold in it. True only flour gold but some people sure get a kick out of seeing a ring of color (yellow gold) around a panful of black sand. The gold is too minute to do anything with or save unless you could pick it up with mercury."—letter dated March 14, 1957, from Mrs. Mary E. King, Star Rt., Palmer, Alaska.

The water well sand is pale green and medium grained. It consists of pale green chlorite (some imbedded in gray calcite and also in smoky quartz) with some gray calcite, smoky quartz, and a tiny amount of rusty-brown magnetite. The chlorite apparently faded in color and

is not as bright green as it was originally.

The gold sand is gray in color and medium grained. It consists chiefly of black lustrous magnetite and quartz (milky, smoky, colorless) with smaller amounts of green epidote, pinkish garnet and a few flakes of yellow gold.

Quartz sand from Cambodia

"In the bottle marked 'B' is sand from a small stream 15 miles east of Bokeo, Stung Treng Province, Cambodia (13° 40'N—107° 15'E). We were in the area searching for some old reported copper deposits which we did not find. Also in the same container are some zircons which I got at the zircon mines 1 mile east of Bokeo. Some of them have fairly good natural faces. The zircons are found in a red clay (weathered basalt)." —letter dated April 8, 1957, from Lt. Col. William A. Lucas, Office of the Army Attache, Navy 150 (Box C), F.P.O., San Francisco, Calif.

The sand is gray in color and medium grained. It is all smoky quartz (most grains stained brown by clay).

See Cambodia under World News in this issue for a report on the zircons. Cambodia is one of the Indo-Chinese Associated States in southeastern Asia. Three countries make up the states, the other two are Viet Nam and Laos.

Lake sand from Hatzie Lake, Canada

This is a fine grained, gray sand consisting of quartz (smoky, colorless, brownish), feldspar (white, pale pinkish), silvery muscovite, black magnetite, and green epidote.

"This sand is from Hatzie Lake, Hatzie, B. C., Canada. Hatzie Lake is located about 10 miles east-north-east of the town of Hatzie, B. C. This lake is in between two mountains and is very deep. The opposite shore from which this sand was collected is 200 feet deep." —letter dated Nov. 12, 1956, from Jack M. Park, 148-2nd Ave., Yorkton, Sask., Canada. (Mr. Park sent in the sample).

Lake sand from Bowness, England

Here is an interesting sand sample that was collected by Mrs. W. Hasselgren,

Reginsvagen 6, Bromma., Sweden, when she visited the British Isles some months ago. This sample was taken on the east shore of Lake Windermere at Bowness, Westmoreland, England.

The sample is a dark gray, medium grained sand which consists of quartz (colorless, smoky, faint purplish but gem quality amethyst), green gemmy epidote, pinkish feldspar, silvery muscovite, black magnetite, and dark gray sandstone.

Bowness, the most important town on Lake Windermere, is beautifully situated in a small bay on the east side of the lake.

Windermere, or Winandermere (lake of Windar or winding lake), the largest of England's lakes, is 10½ miles long and so narrow (¼-1¼ miles) as almost to resemble a river. Its greatest depth is 220 feet.

Magnetite sand from Newfoundland

From Newfoundland, one of the world's largest islands (the 16th largest), we have a sand sample that was collected for us by James Elliott, 29 Hardwick Rd., Natick, Mass. The sand was collected in 1955 when he was stationed on the island which belongs to Canada.

The sample is a medium grained, black sand consisting chiefly of black lustrous magnetite with pink to deep red gemmy garnet, feldspar (pink, white), quartz (colorless, smoky), green epidote, colorless zircon that fl. orange, and gray quartzite.

"A beach sand on the shores of St. Georges Bay at the Indian Head Range. You will note that this sand sample contains a high percent of magnetite. This deposit I believe to be of commercial value." —on label with sand.

St. Georges Bay indents the southwestern coast of Newfoundland; the island is in the Atlantic Ocean east of Canada.

Beach sand from Bangka Island, Indonesia

Bangka or Banca is an island in the Malay Archipelago, belonging to Indonesia, about 10 miles east of Sumatra, from which it is separated by the Strait

of Banca. It is about 100 miles long and has an area of 4977 sq. miles. It is celebrated for its tin mines, which are very productive.

From Muntok Beach, on the northwest coast of the island (on the Strait of Banca) we have a sand sample that was collected for us by a subscriber, Miss Natalie E. Nason, Lincoln School, S.V.-P.M., Pendopo, Sumatra, Indonesia. The sample is a coarse grained, brownish sand consisting chiefly of quartz (brownish, smoky, gray chalcedony) with a smaller amount of black lustrous coal and white sea shells.

The island is sometimes spelled Banka.

Chalcedony sand from Shiraz, Iran

"I have forwarded to you by parcel post a specimen of sand from Iran. I am particularly glad to do so because I have derived so much pleasure from your magazine during the years. This sand comes from the river* which flows past the hospital and on through Shiraz. Most of the year it is a very small stream, but in the rainy season it is quite wide at times. I am enclosing a photograph of the river bed taken from the roof of the Nemazee Hospital, an institution under the auspices of the Iran Foundation where I am serving as chief surgeon.

"In recent years I have been especially interested in paleontology, and this is a wonderful region, Shiraz lying near the junction of the Cretaceous and the Paleocene rocks. There are ammonites, gastropods, and we have recently found a locality where echinoids are abundant.

"*The river is called Roud Khanch Khoshk,—which sounds impressive but just means Little Dry River."—letter dated Feb. 16, 1957, from Monroe A. McIver, M.D., Nemazee Hospital, Shiraz Medical Center, Shiraz, Iran.

The sample is a fine grained, brown sand. It consists chiefly of chalcedony (brown, red, some bluish-gray) and jasper (brown, red) with some brown clay and a very tiny amount of black magnetite. Part of the sand was washed to remove the clay and the result was highly successful—a fine grained, bright brown sand made up entirely of gemmy quartz (chalcedony, jasper and some colorless quartz).

Shiraz is in the southern part of Iran, a country in Asia that was formerly called Persia.

Garnet sand from Gales, Scotland

This is a reddish-gray, fine grained sand. It consists chiefly of red to pinkish garnet, colorless quartz, and a small



**The river (Roud Khanch Khoshk) in flood at Shiraz, Iran.
Our sand sample comes from this river.**

amount of black magnetite. The sand was sent in by Sandy Ramsay, 1015 Aikenhead Rd., Kings Park, Glasgow S4, Scotland.

"From the links of the Western Golf Club, Gailes, Ayrshire, Scotland."—on label.

Glacial sand from Switzerland

A subscriber in Switzerland who wishes to remain anonymous sent in this sample which is a medium grained, gray

sand. It consists chiefly of quartz (smoky, milky, colorless, white) with whitish feldspar, whitish muscovite, black biotite, and a tiny amount of black magnetite.

"Sand is from the Stein Glacier, Susten Pass, in the northeastern part of Bern Province, Switzerland."—on label.

A province in Switzerland is known as a canton or kanton.

Collector's Corner

For the special benefit of collectors who may be living in areas far removed from other collectors we have opened this feature. In this corner, a collector may have his name and address listed for the purpose that other collectors may write him in the hope that through correspondence, exchange of ideas and specimens, new friendships may be formed. Listings are free.

Paul F. Patchick,
958 Centinela Ave., Santa Monica,
Calif.

Mrs. Beulah Lehman,
187A S. Edwards, Bishop, Calif.

Rose Wey,
12526 So. Rose Ave., Downey, Calif.

H. J. Kendrick, Ophir,
San Miguel Co., Colo.

Theo. Kirschman,
Haswell, Colo.

Mrs. James F. Donohue, 411 Main St.,
East Hartford, Conn.

Meade B. Norman, 1524 Mitchell Ave.,
Tallahassee, Fla.

Fred Nelson,
2216 Elizabeth Ave., Zion, Ill.

Steven Sturm, 521 Roosevelt Ave.,
Kewanee, Ill.

Victor Felger, 126 Esmond St., Fort
Wayne, Ind.

Edward Rushton, 730 Bexley Road,
West Lafayette, Ind.

Mr. & Mrs. Wm. E. Harvey,
6905 Madison Ave., Hammond, Ind.

Bill Prather, Box 131,
Great Bend, Kans.

Jimmy Henderson, (13 yrs.),
1345 W. 10th St., Bogalusa, La.

M. H. O'Brien, 2927 Vandenberg Rd.,
Muskegon 36, Mich.

Mrs. Marion E. Hull, 704 Gratiot Ave.,
Saginaw, Mich.

Mrs. B. A. Heath,
Skandia, Mich.

Lee E. Payne, Route 1 (Eagle Lake),
Willmar, Minn.

Lew Powell (12 yrs.),
Route 1, Dundee, Miss.

Charles Eggleston (10 yrs.),
908 Ave. E, Cozad, Nebr.

Mrs. J. J. Tamburri,
Box 74, Morganville, N. J.

Edwin Skidmore
253 Central Ave., Mountainside, N.J.

Leo A. Miller,
Blossvale, N.Y.

John Fahey, Jr. (15 yrs.)
38 Barclay St., Albany 9, N.Y.

- Mr. & Mrs. Walter Kowal,
RD2, Goshen, N. Y.
- Nancy Simons (14 yrs.)
167 Main St., Armenia, N.Y.
- Charlie Bennett 210 W. Franklin St.
Horseheads, N. Y.
- Ernest Brill (11 yrs.)
2975 Ave. W., Brooklyn 29, N. Y.
- John Wilson, 44 Van Cort. Pk. Ave.,
Yonkers 2, N. Y.
- Bert Robinson (14 yrs.),
712 Crown St., Brooklyn 13, N. Y.
- Joseph Jeski (13 yrs.), 676 Humboldt
St., Brooklyn 22, N. Y.
- Robert Pasca,
395 Sussex Rd.,
East Meadow, L. I., N. Y.
- Harold J. Lienemann,
Box 42, Gouverneur, N. Y.
- Maxine Megyesi 155 E. Main St.,
South Amherst, Ohio.
- Eileen Philpott (16 yrs.) 2200 Wascana
Ave., Lakewood 7, Ohio.
- Allison Cusick, RD# ,
Unionport, Ohio.
- Rev. C. B. Howells
1679 Parkwood Rd., Lakewood 7, Ohio
- Tommy Kelley (11 yrs.),
528 S. 79 E. Ave., Tulsa, Okla.
- James L. Winder, 1285 N. E. Stephens,
Roseburg, Ore.
- Theresa Farnham, R. D. 2, Cambridge
Springs, Pa.
- George R. Schortz, R. D. 1
Bethlehem, Pa.
- Robert C. Smith, II,
920 Seneca St., Bethlehem, Pa.
- Mrs. Ammon Schwartzbach,
2239 Logan St., Harrisburg, Pa.
- Mrs. Tres, Lawhead, 3936 W. Ridge Rd.,
Erie, Pa.
- Edward Carey (11 yrs.), 200 Atwell Ave,
Providence, R.I.
- Mrs. J. O. Blackwell,
R #5, Abilene, Texas
- Walter Scott Gray, Jr., 417 S. Perry Ave,
Dcnison, Tex.
- Earl Medlin (16 yrs.),
1301 N. Oak,
Mineral Wells, Texas
- Gary Coen (14 yrs.), 3762 Valley Ridge
Dallas 20, Texas.
- P. M. Plimmer, Box 701, Alpine, Texas.
- Karen Hufnagel (14 yrs.),
East Ryegate, Vermont
- G. W. Weber, 1320 Portland Ave.,
Walla Walla, Wash.
- M. W. Anthony, P. O. Box 260,
Bellingham, Wash.
- Lyle, De Rusha, RR4,
Chippewa Falls, Wisc.
- Earl C. Peterson
New Lisbon, Wisc.
- Mrs. Mary E. King
Star Rt., Palmer, Alaska.
- Miss Carol Corns (16 yrs.), 365 Hillsdale
Ave. E., Toronto, Ont., Canada.
- Ernest Windisch 1576 Desmarchais Blvd.
Montreal 20, Que., Canada.
- Lt. W. L. Hiss, 94 Green Lane,
Padgate, Warrington,
Lancashire, England

Wuerker-Annotated tables of strength and elastic properties of rocks.

By Rudolph G. Wuerker, Dept. of Mining and Metallurgical Engineering, University of Illinois, Urbana, Ill.

Reprints of this 12-page technical paper are available from the author.



WOMEN'S CORNER OF R&M

Conducted by Winnie Bourne
c/o Rocks and Minerals

Box 29, Peekskill, N. Y.

MY GEM COLLECTING EXPERIENCE

Dear Winnie:

After reading so many fascinating articles in the Women's Corner of R&M, I decided to tell you how I became interested in my gem hobby.

My first acquaintance with an agate occurred when I was a little girl. My grandfather was always bringing agates into the house and they became so numerous that I was told one day to carry them outside and place them in a pile by the house..

I never thought much about agates in those days although I admired their colors and patterns. I had never seen any cut stones except a brooch my grandmother wore which was a red and white striped carnelian.

One day as I was in town with my grandmother we passed an agate shop and stopped to look at the jewelry in the windows. She said these words to me which I recall from time to time and wish she could have lived to see my hobby now. She said, "How would you like to make jewelry out of agates?" and my disinterested reply at the time was, "Oh, it might be alright but how is it done?" She didn't know.

In those days agate cutting was more or less a trade secret and one never knew how to get started or where to look for information.

One summer while on a trip to the ocean beaches my brother and I accompanied our grandfather on a six mile hike up the beach. Now and then he would stop and pick up an agate. Finally he said to me, "See if you can find some like these." He gave me one to go by and I was on my own.

That evening on returning to camp

I placed my treasures of agates and shells near my cot. Need I say that the shells were crawling around by morning—they did not look inhabited when I had gathered them and now they had such frightful looking creatures on them! The agates I brought home, but soon they joined the pile outside the house.

Years later when on my honeymoon trip to the beaches I found a beautiful blue moon agate and introduced my husband to agates. This agate was destined to become the set for my first piece of jewelry years later.

Many trips were taken to the beaches (on the Pacific Ocean) and each time brought a steady growing collection of agates in fruit jars that just sat around looking pretty.

What should we do with them. One day we were making cement walls, terracing our yard and in the top of the walls went many fine agates, which we look at now and think what nice ring sets they would make. Still the collection of agates continued to grow. Then one day my husband's mother remarked to me that it would be nice if I could make something out of them. The thought took hold.

My brother, who is a mechanic and an electrician, told me of a man he knew who could saw agates in two with a saw—he found out where to get equipment and he helped me set up my first lapidary outfit which was a simple home-made affair. First a grinder, then two, next a sander, then a buffer and finally a saw.

We moved the equipment from the porch to the basement and with many changes, finally got rolling, and I was

on my way. Every spare moment found my "nose to the grindstone." Quite a rockhound. This was back in 1945.

My enthusiasm knew no bounds and as a hobby I opened an agate shop the next year. I was the only person with such a shop in this area at that time and so I had lots of visitors. Finally the idea that interested persons might like to have a gem club started me to find out, with the result that I formed the Washougal Gem Club. That was 10 years ago this past February and the club is still going strong. I was elected the first president and held that office for the next seven years. Since then I have held other offices and still do.

A few years ago my husband and I and our three children (2 girls, 1 boy), attended a gem show in California and we went on our first field trip away from home. I learned all I could and with the information thus obtained the idea that our club could put on a gem show found favor with the membership; this year our club will put on its fifth annual show in Camas, Wash., May 18 and 19. No admission is charged and we give away some very nice door prizes each year.

At the present time some plans are forming for a museum to house my collections of minerals, fluorescents, crystals, cut stones, Western States group, stones of the United States, a Biblical Gem Stone Collection, a Story in Stones (stones with natural pictures in them around which I have built a story), a family tree of the quartz minerals, and a collection of the different types of rocks, transparencies, U.V. lamps, butterflies of stones, paper weights, a couple of spheres as well as some beautiful tumbled stones and jewelry I have made, to mention a few.

When you hear the expression that the Western states are the bonanza areas for gem collecting, I can heartily agree that we have them. I have been in all but the six New England states and have seen nothing to compare with the areas out here.

The following is an insight into just a few of the areas I have visited. The tons of agates collected over the years in my basement from numerous areas, most of which will be used in my museum building, tell that I have been places.

The high desert areas of our Western states have their share of gem areas.

Thunder eggs, a nodule type of agate, are known most everywhere. There are many areas out here, each having eggs of definite characteristics and one who has worked with different ones can tell where they're from just by sight. Friday Ranch, now called Fulton's agate beds, near Willowdale, Oregon, has long been a thunder egg area. I remember the first trip I had to this area, pits and holes were everywhere from a few feet deep to 12 and 14 feet or more. The eggs were in layers in the bottom and in the sides of these pits in the rhyolite formation. It was hard digging but worth it.

Another area near Burns, Oregon, where the eggs are dug near the surface. The Ochoco Mts., near Burns, have several diggings and yield different eggs. Sucker Creek in Idaho and areas in California are other interesting places.

The eggs come in all sizes. I have some the size of a garden pea to a foot across and I have seen one that filled the bed of a four-wheel trailer and several feet in thickness. This one did not have much matrix and one could see the agate all through it in colors and patterns. It was on display at the Prineville Gem Show not long ago.

One cannot be too careful when digging for thunder eggs as I recall an experience in the Wild Cat Mts. of Eastern Oregon. My dad, husband and son were on this trip. Dad and I were digging on a steep side hill under a steep overhang and throwing the dirt and rocks over the edge of the diggings when my son was hit in the middle of the back by a large rock that dislodged and rolled down the hill to where he was sitting by a tree. The scream that went up al-

most petrified us and when we reached him he was bleeding from the mouth and almost in hysterics, he was so frightened. Here we were, way up in the mountains, miles and miles from even a ranch, let alone a town, and we didn't know how badly he was hurt at first, but after a while he seemed to get over it with no ill effects. This took away our enthusiasm to do much more that day. Later the doctor said he wasn't hurt badly.

One summer while on a rock hunt, Dad and I, after digging thunder eggs out of the middle of a country road and filling up the holes again, looked over a hillside and I picked out a spot to dig at random and came upon a "nest" of thunder eggs all in a group. I later dug east and west, north and south from that area but found no more eggs.

The area here near Washougal, Wash., has long been a favorite collecting area but it is so well picked by now that not much is found anymore unless the creek goes on a rampage down the canyon and uncovers more gravel. Everything from carnelian, moss agates, beautiful iris, jaspers of all colors and jasper moss agates, ribbon, fortification and clear agates with green moss have been found here.

I remember the first time I visited this area, woefully lacking in the knowledge I have now of agates. The scene before me was like looking into a valley of autumn leaves, it was so colorful with jaspers and moss agates. I collected a few nice ones that I have since cut and polished.

My most favorite collecting area is called Graveyard Point, near Homedale in Idaho, where we first went on a field trip from the Northwest Federation convention at Caldwell, Idaho. We have been back to this area numerous times and always find good material just waiting to be picked, on top of the ground. This is desert country and covers many square miles of open land. Here we find plume, moss and some jasp-agates.

This Idaho area looked so fantastic to us at our first visit that we took quite a few pictures of the agates lying in the

gullies and on the hills and the big seams that ran across one hill down the side and up another, and of all the seam diggings. My husband and son sat on one big agate outcrop for a picture; next year it had been broken up and most of it carried away. There is still lots of material there but each time we go back we can see that it is slowly disappearing from the top of the ground and before long we may have to do some digging if we want specimens.

Beacon Hill is another place we have been to twice for nodules. It is over a rough road that one must travel and the locality is high up on top of a mountain near an airplane beacon. The scenery, though is beautiful; the Snake River below looks like a silver thread and trains look like toys on the track along the river. It gets very hot and sometimes windy on this mountain. Lots of mountains in the distance make a nice picture.

One of the biggest thrills I got was on a field trip in Southern California to the Pala and Mesa Grande tourmaline gem mines. (Mt Palomar makes a nice side trip). We were digging in the mine and I uncovered a beautiful pink rubellite (tourmaline). We got many nice specimens of this pink tourmaline, also of lithia mica (lepidolite). The mine owner took us down the shaft so we could see the gems in their natural settings; then we visited a display at the home of one of the owners of another nearby mine. Some of the gems were breath-taking in beauty and size.

I hiked all alone up a long trail to another mine where I saw black tourmaline crystals so large that I couldn't reach around them, but they were not of gem quality. I was disappointed to think the camera was back in the car and that it was so many miles up to this mine on that hot day or I would have returned just to get a picture of those crystals. I brought home some nice black tourmaline crystals in their matrix—the crystals were as large as two lead pencils.

A nice area for collecting red opalized wood is about 100 miles east of here (Washougal, Wash.). It was a fa-

vorite spot until one spring when the snow went off the whole hillside, came down and covered up the area under tons of rock and dirt. It is in an area up a steep canyon and one cannot get anything in to uncover it.

Eagle Rock, near Prineville, Oregon, was also a favorite area but the last time we were there my daughters, son and my dad ran into rattlesnakes so thick you couldn't take a step anywhere near the car without all the small clumps of brush buzzing. We had come down the mountain from a good day of collecting with no thought of snakes but when Dad stumbled over one in the path and my daughter almost stepped on one as she was taking pictures of the valley below, that dampened our enthusiasm for that area.

We collected some beautiful angel wing formations from the high cliffs and some nice cutting material which forms under the outside wing formation.

I have collected in a great many areas that are not even listed in gem trail books. One area we came across in Wyoming where moss agate was all over the ground; the next time we went back a new highway had been built through that section and we couldn't find our agate area, search as we did.

A nice field trip we took this year out from the Northwest Federation Convention at Boise, Idaho, where I was elected treasurer of the Federation. The trip took us to virgin territory about 60 miles south of Boise on an old stage coach road at the remains of a stopover known as Fort Rock. Here I uncovered a pocket of big chunks of moss opal while others uncovered some chartreuse colored opalized wood. We traded and I had some of the wood to bring home.

Near there was another area that we visited for limb casts that were imbedded in a sandstone formation high up on a mountainside with such overhang from previous diggings that we hesitated to dig under, but dig we did and got some very nice black limb casts (petrified wood). They were of the size of a pencil to wrist size and took a nice polish.

These notes cover just a few of the highlights of some of my trips for minerals and I do hope to be able to visit a number of these places again before this year is out.

Good luck to your column.

Mrs. Nick Mueller
Washougal, Wash.

March 22, 1957

MRS. CHARLOTTE WALL

(Obituary Notice)

Editor R&M:

"Thank you for your letter and words of sympathy on the passing of my mother, Mrs. Charlotte M. Wall, who died on April 23, 1957. Mother was a subscriber for R&M for over 15 years and a member of the Boston Mineral Club for about the same length of time.

"An ardent mineral collector, she was not only interested in field trips but also took over the chore of numbering and cataloging the specimens and in many other ways keeping our large collection shipshape. She was interested in swapping and had many friends throughout the country with whom she traded.

"Mother also had a large shell and sand collection, all nicely displayed and of which she was justly proud."

M. W. Wall
24 Euston St.
Brookline, Mass.

May 12, 1957

A teacher exhibits R&M!

Editor R&M:

"You would have liked my exhibit at school for our Faculty Hobbies. I had just one large piece of prehnite flanked by about 8 issues of R&M—some opened, some closed. An Art teacher arranged them to best advantage."

Miss Violet Miller
420 Ovington Ave.
Brooklyn 9, N. Y.

May 11, 1957

A wise man's observations!

Editor R&M:

Here is a remark my 10 year old Charles made to me. "If all the people in the world were as nice and as helpful as the rockhounds we've met, it would be a better place in which to live."

Mrs. C. L. Eggleston
908 Ave. E
Cozad, Nebr.

May 8, 1957

THE MICRO-MOUNTER

Conducted by Neal Yedlin, 129 Englewood Dr., New Haven, Conn.

This is a request addressed to Maine collectors and collectors of Maine minerals: Look thru your cabinets for purple apatite, or purple fluorite from Newry, Maine. If the material is in xls, on albite, with brown roscherite, and if on close inspection with a hand lens the mineral occurs in steep, square pyramids instead of hexagonal xls or octahedrons, you may have something new. Please send it to us, all you have. We'll buy it, trade for it, or return it intact. Work is being done on the substance, and not enough of it is in captivity to complete the research. **DO IT NOW!!**

The Baltimore Mineral Society is at it again. First, it is republishing Dr. Wills' fine article on micromounts which appeared in the Dec. 1931 edition of **ROCKS AND MINERALS**, and which is out of print. The price is 30c post-paid, (no stamps) and letters should be addressed to: Baltimore Mineral Society, 400 Cathedral St., Baltimore, Md.

The article will be offset printed to permit this low price, which just about covers cost. The article is a "must" for serious m/m enthusiasts. It contains just about all that is necessary for the pursuit of the science, and altho reams of pages have been written since its original publication it is still the basic and fundamental reference.

The first national symposium for m/m collectors will be sponsored by the Baltimore Mineral Society, and will be held in that city on Sept. 14, 1957. There will be exhibits, talks, demonstrations, and supplies of mineral material for the micro-mounter. For further information contact the Baltimore Mineral Society, at Maryland Academy of Sciences, 400 Cathedral St., Baltimore, Md., and see this magazine elsewhere for announcements. This will be the first time in history that there will be such a gathering. Register and be sure to attend.

You'll have a ball.

Lou Perloff has converted to plastic boxes. "The old order changeth, yielding place to new." He always was a square box fiend, (Note: This isn't quite what it sounds like.) and with his passing to the realm of the synthetic there aren't many die-hards left. We are one of them. The thought of transferring over 4600 mounts from oblong paper boxes to square plastic ones is something to consider. Perloff, however, says he can now breathe again. Stuff had piled up for years, and for every one he'd mounted another had to be discarded. Now he's again operational, and invites a flow of material to himself. He's a good man to swap with.

Paper inserts were a nuisance. Lou says that Sherwin-Williams' black #300 when smeared on the inside of a plastic box dries flat, even and hard and entirely kills glare. We tried Sapolin flat black enamel, and it too works wonders. Don't be fussy. Smear it on the inside. It leaves a first rate finish.

When cementing paper labels to a plastic box be sure to put a few deep scratches on the plastic to be covered. They act to make a firm grip, and the label won't snap off. Better are the self-adhering labels. Just press 'em on and they're permanent.

We have a couple of oblong paper micromounts that were part of the O. I. Lee collection and came to us by way of Phil Cosminsky of Falls Church, Va. The printed labels bear the data—"C. E. Hanaman, Troy, N. Y." We spent several months in Troy last year, visited the N.Y. State Museum collection at Albany, and the Rensselaer Polytechnic Institute collection at Troy. Nowhere did we come across the name. We'd like to know more about this old-time m/m collector. Can anybody supply information?

Years ago ROCKS AND MINERALS conducted an informal contest on specimens with the greatest number of individual minerals. We've forgotten the details, but were reminded of the contest when we examined a specimen under the binocular microscope. From the Fletcher Quarry, North Groton, New Hampshire. Not including the rock forming material—feldspar, quartz, mica, etc., no fewer than 10 phosphate minerals were observed, all in a specimen roughly 2" x 2" in size. Here they are: strengite, metastrengite, hureaulite, rockbridgite, strunzite, stewartite, laueite, xanthoxenite, bermanite, and leucophosphite. Ten of 'em. Nice, eh? How many have you come across in your own collection?

Some time ago there was available at the government printing office a wonderful publication on the Minerals of Franklin, New Jersey. The edition was sold out in no time at all. A second printing appeared. This, too, sold out in short order. It has never been reissued and copies are selling at from \$3.00 to \$5.00 when they turn up in the bookstores. Original price was about 75c.

We think that if enough collectors write in to inquire about it the printing office will again issue the publication. Send no money—just a letter asking if it is available. And you might even write your congressman. Write to: Sup't of Documents, U.S. Gov't Printing Office, Washington 25, D. C. "Minerals of Franklin & Sterling Hill, New Jersey", by Palache. U. S. Geologic Survey Professional Paper #180.

Something new turned up with the use of plastic m/m boxes not possible with paper ones. We've mounted, as have you, beautiful bright specimens of silver or copper, only to have them blacken due to air or sulfur in the paper.

Well, Harold A. Greene, 4409 Fairview Ave., Baltimore, sent us a mount recently. Bright copper xls, guaranteed not to tarnish. The trick? Easy when you know how. Mount the specimen as usual. Replace the air with an inert gas and seal the box with Duco cement. Presto, done. He'll gladly tell how.

June 8th was a good day. Phone call to Perloff in North Carolina and to Cominsky in Virginia set-up a mineral outing. Next day at 10:00 A.M. "we three met again, in thunder, lightning and in rain—," not in Denmark, but in a rain-storm at Amelia, Virginia, to visit again the two famous areas, the Rutherford and Morefield quarries. Descriptions of the localities abound in the literature so that we shall dispense with them. At the Rutherford quarry (owned and farmed by the Keeners) the dumps of shaft #1 had been leveled, covered with earth and were being used as pasture. (Altho there was talk of a lease for green microcline.) Across the creek at water-filled shaft #2 the dumps were extensive and available, and two hours of casual collecting produced fine micro xls of albite, gemmy spessartite garnet, arsenopyrite, pyrite, microlite, zircon, muscovite, quartz (one by Perloff with an astounding basal pinacoid—"C" face to you), a bright metallic which may prove to be loellingite, and possibly bertrandite. The owners charge \$1.00 per person for collecting up to 10 lbs. of minerals, and ten cents per lb. beyond that. Fair enough.

At Morefield's (we visited his house first and he accompanied us to the quarry) we added monazite, columbo-tantalite, darker microlite, blue albite and phenakite. Mr. Morefield, an old friend of ours, sells the fine green amazonite from his operation to collectors and cutters, and insists that no one visit his property without him, a more than reasonable request. He lives about a quarter mile beyond the road entering his mine.

The rain had let up entirely during the day, and altho there was mud, the wet rock was easy to see and evaluate, and the puddles of water afforded specimen washing facilities.

This was a wonderful trip. How often can you come away from a quarry with from 12 to 14 specimens good enough to add to a collection?

THE AMATEUR LAPIDARY

Conducted by Captain George W. Owens

Hq Sq 384th Bombardment Wing, Little Rock Air Force Base, Jacksonville, Arkansas

Amateur and professional lapidaries are cordially invited to submit contributions and so make this department of interest to all

REPORT ON SPINEL

Natural spinel has long been used as a gem stone. Its hardness, refraction index, and the variety of colors in which it is found makes it an ideal stone for either the specialist collector, the average general collector, or the person who desires to facet his own. It is equally popular with jewelers. Spinel in all its many hues and colors is a most beautiful gem.

Spinel is found in colors ranging from clear white to opaque black. Like most other gem varieties of minerals, distinctive colors of spinel have, through the ages, been awarded or given special names. Pleonast, denotes the opaque black variety, which incidentally, is a rather rare type that makes a very outstanding cabochon or even a faceted gem.

"Balas Ruby" is a term that has been applied to a vivid pinkish to red clear type of spinel. This particular color is outstanding in any collection. While not rare, you will have difficulty in locating a good specimen due to its popularity with both the collector and the commercial jeweler. Expect to pay a premium price for a large stone in this color. The term "Balas Ruby" should be considered as an incorrect name for pink to red colors of spinel. Other colors that have proven popular over the years are: gun-metal, blue in all shades, green, and the collector's white. While only a few collections contain a pleonast, this opaque black definitely should be represented by at least one cabochon of faceted stone. Good solid material in black is difficult to obtain but rough does appear on the market from time to time.

Spinel in large sizes fetch very substantial prices, but stones of under three

carats may be obtained at most reasonable sums, depending naturally, on the cut, quality of rough, and in some cases, color. Reposing in the author's collection is an outstanding lavender spinel of six carats weight. This gem is exceedingly lively and is of excellent cut. Its per carat weight value is much more than that of the common garden variety of blue spinel that rests next to it. It is possible for any average collector to add a spinel to his collection at a modest price. Natural spinels may be obtained at prices from under five dollars a carat up to sums quite out of the reach of the average collector. One collector, known to the author, specializes in faceted spinels. Hardly a month goes by that he does not add one stone to his already outstanding collection. When last observed, he had some thirty gems with no two of the same identical color hue. In size, his collection has stones of under one carat weight to one beautiful blue beauty of twelve carats. By adding a stone a month over a period of time he has assembled a collection anyone would be proud to own. This, together with the fact the collection has been accomplished on a very limited budget, just helps prove that any one of us could have a fine collection of faceted stones if we would only have the patience and be selective in our buying. The author's own collection of spinels could be improved considerably and a current project (using the aforementioned "one-month" plan) has been started.

A recent acquisition was a packet of fine spinels in blues, greens, and pinks. A total weight of approximately 140 carats with the average weight per stone of

two carats. Several of these were immediately added to the collection and the balance set aside for trading purposes. Those set aside were every bit as good as those retained but were of duplicate colors to some already in the collection. Still desired for the collection are several shades of pink, blue, and green. These will be added from time to time—and, while the assortment may never rival the fine collection of our friend, at least it will be far superior to its present state.

Spinel lends itself to display purposes exceptionally well as its refractive index is high enough to cause it to appear to advantage even when shown in a poor light condition. The great variety of colors that it is possible to assemble adds beauty and distinction to the display. A project of establishing a spinel collection is worthy of consideration by every one of us interested in gems.

Spinel is found in these United States at several locations—mainly in North Carolina and New Mexico. While these states have never supplied any great amount of stones, every year a few are found by avid collectors. Anyone driving through one of the areas or planning a vacation in the vicinity of the locations would do well to talk to the local residents. Service station operators and motel owners have been known to supply some very good tips on location and in some cases have even managed to come up with outstanding specimens. Do not overlook the possibility of stopping at any farmhouse near a cited location. Often the younger members of the family not only know the location you are seeking, but may have finer material than you will be able to obtain by yourself.

A word of caution about locations you may find: Chances are that the land is owned by one of the local residents. Permission to enter should be obtained, gates carefully closed, and any camp site thoroughly policed for all waste prior to leaving. Nothing will close an area to all collectors quicker than the thoughtless individual who leaves gates open, scatters paper and tin cans to the four winds

and utterly disregards the property rights of the owner.

Incidentally, this column will be available for reporting any find of faceting grade spinel. Readers are encouraged to either write their own article or to supply the necessary information to the author.

The main sources of gem spinel are Burma, Ceylon, Siam and Brazil. A few stones have been reported as coming from the Afghanistan district. India is also a producer of modest amounts of this gem, as is Southern Africa, usually recovered while mining for other minerals.

The following tables on gem variety spinel will be of interest to the lapidist as well as the collector:

A double Oxide of Magnesium and Aluminum. $MgAl_2O_4$ ($MgOAl_2O_3$)
 Black: Pleonast—fairly rare—Opaque.
 Blue: Sometimes called "Sapphire Spinel"—rarely in the violet-blue hue of fine sapphire.

Purple: Known as Almandine Spinel.

Yellow to Reddish Orange: Flame Spinel and Rubicelle when color is intense.

Rose and Pink: "Balas Ruby"—incorrect term.

Red: All medium to dark reds.

Colorless: Rare (collector's item).

Cubic System: Twins common.

Hardness 8: Streak white.

Refraction Average: 1.726-1.730..

Isotropic: Singly refractive.

Dispersion fair: .020

Spinel often contains included crystals and liquid inclusions. Formations in which found have been limestone, calcite, gneiss, serpentine and, of course, gem gravels.

Recommended angles for cutting: Crown Angles 40° , Pavilion Angles 40° .

Recommended polishing combinations: Tin with Linde A., or Type with Ruby Dix or Linde A.

Some of the world's famous gemstones are spinel. The Smithsonian Institute has on display a tray of excellent spinels, several of which are in unusual colors. The author does not remember seeing a pleonast in the display.

Most of our gem spinel comes from Burma and Ceylon. It is imported into the United States after it has been faceted or cut en cabochon. A few dealers offer rough for faceting but most of this that the author has seen would have been much more suitable for cabs or tumbling. Provided you are able to procure or buy a suitable bit of rough, you will find that spinel, despite its hardness of 8, cuts rapidly on a bronze lap using 400, 600, or even 800 bort. A very high polish is possible. The table above gives recommended polishing combinations. Both give excellent results but the first mentioned is slightly faster. 6400 diamond on a hard lap will also give good results.

A few spinels will enhance any collection and if you do not own one, why not consider adding a representative of this well-known gem? Or you could

start your gem collection with a spinel. If you do not have a gem collection, do no faceting, but have an interest in gems and minerals, here is a good stone, at a modest price, that can readily be used as a basis for a fine collection. This column will be happy to supply you with a list of dealers who, from personal experience of the author, will give you courteous treatment, true value for your money, and supply you with real gems. Why not start that collection today? With a very modest purchase each month it will be only a short time before you can have a tray of gems that will dazzle the eyes of all. Remember, if you exercise your own good judgement, your collection can only increase in value as time passes because a good gem is an investment as well as a show piece!

VISITING ROCKHOUNDS WELCOME

The following subscribers would be delighted to have rockhounds call on them when passing through their cities. If any one else wants his name added to the list, just let us know.

R. A. Richards, Box 44, Morristown, Ariz.

Mrs. John A. Talbot, 1221 W. 6th Ave., Pine Bluff, Ark.

Paul F. Patchick, 908 Centinela Ave., Santa Monica, Calif.

Mrs. George W. Matson, Matson Ranch, South Fork, Calif.

Mr. & Mrs. W. T. Graham, 1500 Kawana Springs Road, Santa Rosa, Calif.

Rose Wey, 12525 S. Rose Ave., Downey, Calif.

Donald F. Crain, Metropolitan Life Ins. Co., Grand Junction, Colo.

Mrs. Austin W. Harris, Newent Road, Jewett City, Conn.

Mrs. James F. Donohue, 441 Main St., East Hartford, Conn.

Meade B. Norman, 1524 Mitchell Ave., Tallahassee, Fla.

Gerald Navratil, Bonners Ferry Ranger Station, Box 119, Bonners Ferry, Idaho.

Bert C. Cole, 2233 Broadway, Boise, Idaho.

Galena Rock & Mineral Museum, Route 20 & 80, Galena, Ill.

Russell P. Neuwerk, 540-29th Ave., Moline, Ill.

Steve Sturm, 521 Roosevelt Ave., Kewanee, Ill.

F. L. Fleener, 1415 Rosmer St., Joliet, Ill.

Leroy H. Grossman, 211 N. Park Ave., Batesville, Ind.

Edward Rushton, 730 Bexley Road, West Lafayette, Ind.

Mr. & Mrs. Wm. E. Harvey, 6905 Madison Ave., Hammond, Ind.

Rex Lucas, Sumner, Iowa.

Rev. D.L. Lichtenfelt, Calamus, Iowa.

Visiting Rockhounds Welcome (Continued)

- | | |
|--|---|
| Mark Dunn,
316 Summer St., Cherokee, Iowa. | Roger S. Hubbard
RFD No. 1, Meredith, N.H. |
| Mrs. Russell I. Griffith,
1013 W. 18th St., Cedar Falls, Iowa | Edward T. Barone, 48 Elmwood Rd.,
Verona, N. J. |
| Larry Boyer, 809 - 9th Ave. E.,
Oskaloosa, Iowa | Clark P. McLean, Brass Castle Road,
RD #1, Belvidere, N. J. |
| Mrs. Frank Krogmeier, Sr., R. R. 2, Fort
Madison, Iowa. | Edwin Skidmore, 253 Central Ave.,
Mountainside, N.J. |
| Bill Prather, U.S. 281,
4 1/2 miles north of Great Bend, Kans. | Don Alfredo, 322 Linda Vista,
Las Cruces, N. Mex. |
| Mrs. Fred Strout,
29 Maple St., Hallowell, Me. | Max C. Linn,
1526 Solano Dr., N.E., Albuquerque,
New Mexico. |
| David B. Sleeper, Box 4,
Sabattus, Me. | Vernon Haskins, East Durham, N. Y. |
| Leroy Leisure, 500 Townsend Ave.,
Baltimore 25, Md. | Leo A. Miller
Blossvale, N. Y. |
| Sam Stewart (14 yrs.),
254 Moose Hill St., Sharon, Mass. | Charlie Bennett, 210 W. Franklin St.
Horseheads, N. Y. |
| Mr. & Mrs. W. M. Krause, 14190
Glastonbury Rd., Detroit 23, Mich. | Mr. & Mrs. Walter Kowal, R.D.2
Goshen, N.Y. |
| Mrs. Marion E. Hull, 704 Gratiot Ave.,
Saginaw, Mich. | Richard L. Sylvester, 145 Crestview Dr.,
Syracuse 7, N.Y. |
| Robert Schenk, R1 Box 71, Republic,
Mich. | Nancy Simons (14 yrs.) 167 Main St.
Amenia, N.Y. |
| Carl F. Lemin, 624 E. Division St.,
Ishpeming, Mich. | Mrs. A. E. Van Inwegen,
195 Broadway, Monticello, N. Y. |
| Lee E. Payne Rt. 1 (Eagle Lake),
Willmar, Minn. | Harold J. Lienemann,
62 N. Gordon St., Gouverneur, N. Y. |
| Geo. C. Dick,
9207 Argyle, Overland, 14, Mo. | Robert Ransom, 906 Woodland Ave.,
Schenectady, N. Y. |
| Brentwood Lapidary & Gem Shop,
8913 White Ave., St. Louis 17, Mo.
Phone WOODland 2-4067. | William N. Secrist, 193 Lehigh,
Rochester 19, N. Y.
Phone GENesee 8216M |
| Robert Kissick, 7140 Theodore Pl.,
St. Louis 20, Mo. | Ernest Brill (11 yrs.),
2975 Ave. W, Brooklyn, 29, N. Y. |
| Alvin W. Kemp, 231 Elmwood Blvd,
Jackson, Mo. | Martin Seidman, 144-08 Grand Central
Pkway, Jamaica, L. I., N. Y. |
| I. Everett,
2941 N. 65th, Lincoln, Nebr. | Donald V. Dalton, Box 68,
Chimney Rock, N. C. |
| Rev. M. E. Corbett, The Parsonage,
Acworth, N. H. | |

Visiting Rockhounds Welcome (Continued)

Dept. of Physical Science,
Belmont Abbey College,
Belmont, N. C.

Fred J. Teague, 1612 3rd Ave.,
S. W., Hickory, N. C.

D. R. Holder, 4485 Indiana Ave.,
Winston-Salem, N. C.

Mr. & Mrs. Clarence Carey,
Collins, Ohio

Rev. C. B. Howells, 169 Parkwood
Ave., Lakewood 7, Ohio.

Bill Berke, 1446 Earlham Dr., Dayton 6,
Ohio.

Eileen Philpott (16 yrs.), 2200 Wascana
Ave., Lakewood 7, Ohio.

Albert Laws Kidwell, 1410 Terrace Drive
Tulsa, Okla.

Rev. Wm. J. Frazer, 625 Main St.,
Moosic 7, Penn.

Mrs. Ammon Schwartzbach,
2239 Logan St., Harrisburg, Pa.

Paul M. Popovich, 124 Lincoln Ave.,
Leechburg, Pa.

Theresa Farnham,
R D 2, Cambridge Springs, Pa.

Leighton Donley, Box 101, Miners Vil-
lage, Cornwall, Pa.

H. C. Van Tassel,
8009 Westmoreland Ave.
Pittsburgh 18, Pa.

Edward Carev (11 yrs.), 200 Atwell Ave.,
Providence, R. I.

Adolph Hillstead, 1309 4th St.,
Brookings, S. D.

M. S. Ortman, Ortman Museum, 6 mi. N.
of Marion, S.D.

Mrs. Edwin P. Olson,
Beresford, S. D.

P. M. Plimmer, Box 701, Alpine, Texas
(2 miles west on U.S. 67 & 90)

Robert Peck, 3011 Spurlock St., Dallas
23, Texas

Howard V. Hamilton, 1340 Crandall
Ave., Salt Lake City 6, Utah.

Charles A. Steen, Utex Exploration Co.,
Inc., Moab, Utah.

Karen Hufnagel (14 yrs.) East Ryegate,
Vermont.

James M. Fagan
Wallace, Va.

G. W. Weber, 1320 Portland Ave.,
Walla Walla, Wash.

John T. Scott, Linger Longer Lodge,
Moses Lake, Wash.

Lyle De Rusha, RR4,
Chippewa Falls, Wis.

Mrs. Mary E. King, Star Route, Palmer
Alaska.

Mrs. E. R. Willis, 17-3rd Ave.,
Chilliwack, B.C., Canada

Lt. W. L. Hiss, 94 Green Lane,
Padgate, Warrington, Lancashire,
England

Coming Events

Aug. 29, 30, 31, 1957—7th Eastern Federa-
tion Gem and Mineral Show, Chamberlin
Hotel, Old Point Comfort, Virginia. For infor-
mation contact Mrs. B. E. Hunt, 3531 Ches-
apeake Blvd., Hampton, Va.

Oct. 19, 20, 1957—San Francisco Gem &
Mineral Society Annual Show, Scottish Rite
Auditorium, 1290 Sutter St., San Francisco,
Calif. For information contact Mrs. Geo. H.
Learned, Jr., 428 Belvedere St., San Francisco
17, Calif.

SERVICE TO THE COLLECTOR WITH A SMILE

Mr. Peter Zodac,
Editor, Rocks & Minerals,
Peekskill, New York
Dear Mr. Zodac:

A few years ago I received a letter from Frank Duncan, of Terlingua, Texas. Mr. Duncan, as you know, was once a mineral dealer specializing in Terlingua, Texas, mineral specimens. I am taking the liberty of quoting some excerpts from his letter, and I am doing this without Mr. Duncan's knowledge or permission. I think the following information will enlighten some members of the mineral collecting fraternity. Quote:

"I have not been well, but still have to keep going. Will have to try to go to Alpine, our county seat, which is about 100 miles from here over bad mountain roads. It is also the nearest point from here to a doctor or hospital. Am badly crippled in both feet and have to be on them entirely too much. I will try to get county or state treatment, as I am unable financially to do so. Owing to my once owning much valuable mining property, I may not be able to get such treatment.

"I am past 71 years of age. Miners get little consideration in this state. The country is strictly stockman's country, and they are strictly against mining. They have made laws that are impossible to comply with, and Texas is not subject to United States Mining Laws. However, the U. S. Government did control the sale, prices and mines during the war (1943). We were given high priorities and the workmen were frozen to the jobs. But as soon as the German submarine menace was broken, the government suddenly broke our contracts and took our priorities away.

"The workmen left to work for high wages paid on government jobs. The government paid Spain \$212.00 per flask of mercury during that time, and the government did not cancel its contract with Spain until 1947. All the mines here were unable to obtain workmen or supplies, and were taxed until they had nothing

left to continue with. I still owe the bank money I borrowed to pay my 1943 taxes, and have steadily gone in debt for groceries and supplies. Have managed to sell enough specimens to meet my annual taxes, and I am left with no other resources, as the tariff was lifted on all foreign mercury and it has flooded the market at a price much lower than we are capable of producing it. I have sold all my equipment for junk iron to raise what I could to keep going, so you can see my financial difficulty. My car and old pick-up are about worn out, so that the problem of transportation is critical."

(Authors note: How about diverting some of the Foreign Aid funds to help our needy miners?).

"So you may not be surprised why I am trying to dispose of my fine collection of mineral specimens and give up any idea of having a museum for this district. If my years were not against me, I am sure I could make a success of it. This long letter may be trying on you to read, but I am sure that you will more readily see why I can't handle my business as I formerly was able to. Fine mineral specimens need wooden boxes and careful packing to get them through safely, and the cost of boxes and packing is prohibitive. Half the cost of some fine specimens would be in properly packing and getting them to shipping points. Such specimens are therefore much harder to obtain than many that may be imported from foreign countries . . . etc., etc." End of quote.

Mr. Zodac, I am writing this letter because I feel that Mr. Duncan's plight is typical of most of the old dealers who sacrificed leisure and pleasure in order to provide a service to the mineral collector. The mineral dealer is busy every day in the week, and most Sundays, and works from morning 'til late at night. Correspondence and inquiries from collectors take up all of his spare time, and there are collectors who purchase specimens from him who gripe about the exorbitant prices he charges them.

One collector once called me words that may be translated as "robber", because I charged him \$1.25 for an exceptionally fine 3 x 4 specimen of graphic granite from Bedford, New York. He argued that that particular granite could be found all over the quarry at Bedford— for free. And why should I charge such an exorbitant price for something that could be carted away by the carload— again for free? Little did he realize this particular specimen was an outstanding specimen, and that most reliable dealers discard the run of the mine specimens and sell only quality specimens. In some cases, the dealer discards at least 50 per cent of material purchased or obtained by exchange. He sells quality specimens only, and not material suited for road paving. And if he reckoned the time a dealer spends in testing, analyzing, cataloging or listing, labeling and packing specimens, not to mention the cost of advertising, printing, postage, overhead, rent and many other incidental expenses, the price of \$1.25 would not be too high for even a specimen of ordinary rock.

I can honestly state that all the time I have put into the mineral business over a period of fifteen years has hardly paid an average of ten cents per hour. Most business men would not get very rich, or fat, on such a return. I should like very much to employ some of the collectors who think dealers ask high prices for quality specimens. In fact, I would be very happy to pay them, as a bonus, all the profits in excess of ten cents per working hour. Those having experience in chemistry and laboratory work are preferred. Applicants please wire or phone me immediately. Consideration will be given those wishing to go on a reducing diet.

To the best of my knowledge, no mineral dealer, past or present, made or has made any profit to speak of. All the great and famous dealers of the past 50 years died practically poor. And some died penniless. I cannot mention names, but Mr. Zodiac, you are well aware of

this fact. Most dealers give up the ghost after a year or two. The geological division of the country's leading natural science establishment has been operating at a loss for years. Very few collectors appreciate that a reputable dealer is not in business to get rich — but rather he is dedicated to the rendering of a service to the mineral collector. Indeed, it is impossible to get rich in any business catering to collectors of anything, whether it be minerals or any other hobby.

But for the dealer, the collector would have to travel to Tasmania for his crocoite; to Japan for his stibnite — in fact, to the ends of the earth if he or she expects to have fine and interesting specimens in his or her collection. And with a mineral dealer to serve them, the collector may be able, for a few dollars, to obtain fine specimens from Tasmania, Japan, England, Italy, Oshkosh or Zohharask-Uganrhjas.

And the same could be said of publishers of mineralogical magazines as has been said of mineral dealers. Mr. Zodiac, I appreciate the sacrifice of time and effort you have put into Rocks & Minerals to keep it alive. And you have not grown rich, by any means. You have deprived yourself of many pleasures of life, indeed, you have been devoted to the rendering of a much needed service, at little cost — and little, if any, profit. Costs connected with the publishing of any periodical have been mounting steadily over the past decade. And so has the price of all commodities and necessities, from bread to automobiles. And if I recall correctly, several mineralogical magazines blossomed and withered during this period. The collector should know that the mineral dealer and publisher of hobby periodicals are in reality working for "coolie wages", and do not complain, because their only remuneration is the satisfaction they get in keeping the hobby of mineral collecting as interesting as it is. As for myself, selling minerals is not a

(Continued on page 393)



FOSSIL DEPARTMENT

Conducted by Howard V. Hamilton

1340 Crandall Avenue

Salt Lake City 6, Utah



FOSSIL COLLECTING IN THE ROCHESTER, NEW YORK AREA

by ROBERT M. EATON

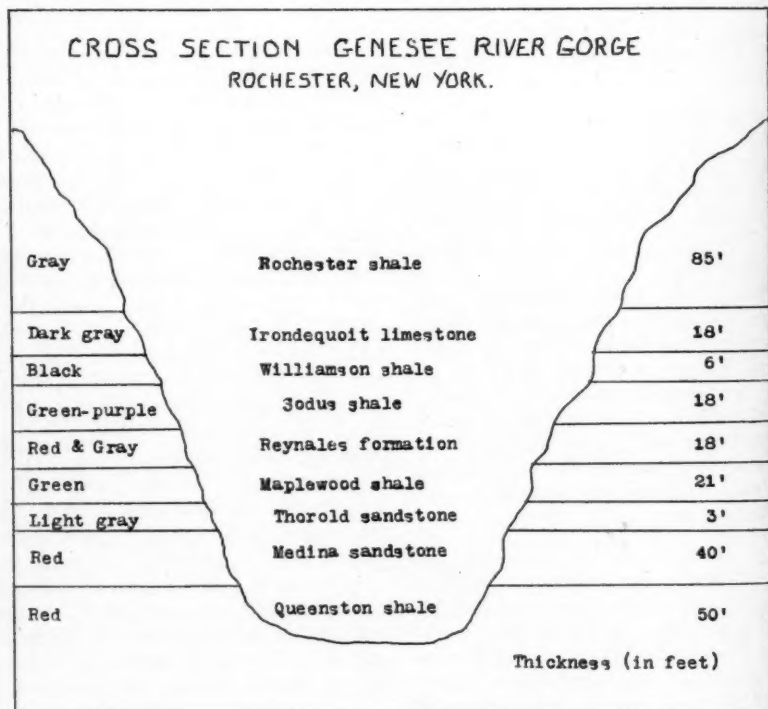
54 Heberle Rd., Rochester 9, N. Y.

Western New York State has long been a favorite fossil collecting ground for schools, colleges, museums and amateur paleontologists.

Of particular interest is the Genesee River which passes through Rochester on its course northward to Lake Ontario, and cuts through rocks of the entire Devonian and the entire Silurian systems.

In the City of Rochester, the gorge,

cut by the river exposes nearly two hundred feet of Silurian rock and shows a sequence of nine distinct formations. Of these, several are quite fossiliferous. The Sodus shale contains layers of pure limestone made up entirely of limy shells of a tiny Brachiopod, *Coelospira hemispherica*. Although it is very difficult to extract an entire single specimen, matrix specimens show layer upon layer of these



shells. The Rochester shale contains numerous Brachiopods, Trilobite remains, and Bryozoa. In the Williamson shale, distinctive remains of extinct colonies of Graptolites, (*Monograptus clintonensis*) are quite attractive. These Graptolites, some attaining a length of eight to twelve inches, show up as a shiny black against the dull black of the shale.

In the limestone member of the Reynales formation a large Brachiopod, *Pentamerus oblongus*, is outstanding. These occur in large numbers, similar to the shells in the Sodus shale. This member is often called the *Pentamerus Limestone*.

Another unusual occurrence in the Rochester gorge is the Furnaceville member of the Reynales. This is a bright red band of hematite which extends horizontally along the banks of the Rochester canyon, and which was responsible for the iron industry near here at the beginning of the century.

This large amount of iron in the limestone has been the basis of much discussion in the past, and yet today poses an unsolved problem in local geology. In

some specimens of this iron ore, fossil remains of Brachiopods, Crinoid stems, etc., may be seen. However, in the majority of cases, these fossils are entirely covered by coatings of hematite, making identification difficult.

Further south and west from Rochester, a coral reef of Lower Devonian age is exposed near the town of LeRoy. Over two hundred species of fossils are known to occur in this formation. The most common are the Corals, followed by Brachiopods, Pelecypods, Gastropods and Crinoid remains.

Near Geneseo, an exposure of the Middle Devonian Hamilton group occurs. This locality is noted for over three hundred species of fossils from Bryozoa to Brachiopods, Corals and Pelecypods. More common species are the Brachiopods, *Atrypa spinosa*, *Athyris spiriferoides*, *Atrypa reticularis*, and *Brachyspirifer adaculus*. The most abundant Corals are the *Cystiphyllum*, *Favosites*, *Heliophyllum halli*, and *Eridophyllum*. Trilobite remains are quite common but complete specimens are very scarce. The



Fossil collecting area near Geneseo, N. Y. Upper and Middle Devonian exposures.

two Trilobites found at this locality are the *Phacops rana*, and *Greenops boothi*.

Further west, near the town of Alden, are found marcasite concretions in the Ludlowville formation of the Hamilton group. These concretions nearly always contain a fossil as a nucleus and are most attractive. Fossils to be found there are the Pelecypod, *Pterochaenia fragilis*, the Brachiopod, *Mucrospirifer mucronatus*, and several types of Cephalopods. Also the minute, lentil-shaped crustacean, *Hamiltonella punctulifera*, an Ostracod.

Many other collecting spots can be found around the Finger Lakes and the numerous ravines leading to them.

There are four types of fossil preservation shown in the different localities named above. Calcite is the most prevalent, and the majority of fossils found at the Genesee locality are calcified. In the Lower Devonian, Onondaga formation, near LeRoy, the fossils are silicified. In Rochester, the fossils in the

Furnaceville member are replaced by hematite, while the fossils found near Alden have been replaced entirely by marcasite.

Due to the fact that the majority of corals, brachiopods, and echinoderms have lime carbonate or calcite in their hard parts, and the mollusks, (gastropods, cephalopods, and pelecypods) have aragonite, an unstable form of lime carbonate in their composition, the remains of the latter have been dissolved away, leaving the markings of the shells preserved in the rock. The original aragonite shell has dissolved more easily in the percolating waters containing carbonic acid, while the shells of the brachiopods, corals and echinoderms have been preserved. Nearly all mollusks found in this section are found as molds and casts.

Any person desiring more information on this locality, or wishing to collect fossils in the area, may contact me at the above address or phone HOpkins 7-4287.

RADIOACTIVE TEST MATERIAL

By Ronald L. Ives

251 Lincoln Ave., Palo Alto, Calif.

Radioactive material, for test and demonstration purposes, is not easily available as such in many parts of the country, for a variety of reasons ranging from lack of demand to unreasonable fear of anything radioactive.

Accurately calibrated test samples can be obtained from regular technical suppliers, such as the Tracerlab Corporation, at reasonable prices for the service rendered, without difficulty. Most of these samples, although strong enough to make a Geiger Counter indicate violently, are entirely safe to use for long periods of time.

Moderate quantities of radioactive material (1 gram and 5 gram lots) are available "over the counter" at watch-makers' supply stores. This material is a standard ingredient in luminous paint, and is sold as "Sun Ray Set". Size #25 contains one gram of radioactive material, set #50 contains 5 grams. The smaller set costs about \$2.50, the larger,

\$7.50. Complete instructions, including safety warnings, come with the material.

A convenient field test sample, costing only a few cents, is a short length of uranium glass tubing, obtainable from a maker of neon signs. Cut ends of uranium glass tubing about $\frac{1}{2}$ " in diameter, locally sell for ten cents an inch and a 2" piece is adequate for testing most radiation detectors.

Rosiwal Method

(Continued from page 345)

* Emeritus Professor of Geology, Former Head of Department of Geology, Texas Technological College.

Editor's Note: There is a sad ending to this story. Just a few days before this issue went to press, word reached us from Mrs. Patton that her husband, Prof. Leroy T. Patton, died of a heart attack on June 22nd. We are very, very sorry and our sincere sympathy is extended to Mrs. Patton.

Club and Society Notes

Attention Secretaries—Please submit neat copies. Give dates and places of meetings.

East

Elkhart Mineral Society

The Elkhart Mineral Society, Inc., has instructed me to inform the Editor of R&M of his election to honorary membership in our society. We welcome him as a fellow member.

All of us are enjoying Dr. Gutschick's lectures on basic geology; in fact, we are wondering how to keep our meetings from lasting so late! The average attendance at the meetings is about 80 persons, which I think is remarkable for a city of this size.

Mrs Richard P. Miller, Sec.
P.O. Box 159
Elkhart, Ind.

(Ed. Note: The Elkhart Mineral Society, Inc., is the only club in the country that is affiliated with the Rocks and Minerals Association—thus ROCKS AND MINERALS is their official magazine.)

The New York Mineralogical Club., Inc.

The club convened at 8 p.m., April 17, in room 403, Schermerhorn Hall, Columbia University, New York City, Curt Segeler, president, in the chair.

William Pfeiffer, membership chairman, presented three names, Laurence Ronan, Thelma Lynham, and Dr. I. Lebell, who were duly elected.

Announcement was made of the details of the Eastern Federation convention.

William Pfeiffer presented the following slate on behalf of the nominating committee: President, Dr. D. O'Connell; vice president, Dave Seaman; second vice president, Joseph Stromwasser; treasurer, Fred Hayden; directors, Curt Segeler and Dr. Fred Stenbuck. The nomination for secretary remained open.

Dr. Brian Mason reported on a new publication, *Gem Stones of the U. S., U. S. Geol. Bul. 1042-G*. Govt. Printing Office, Wash., D. C. 25 cents. Neil Yedlin pointed out that the professional paper 180 U.S. Geol. "Minerals of Franklin, N. J." was out of print and suggested that if enough people wrote in, perhaps it would be reprinted.

Dr. Wm. Heinrich, professor of mineralogy, University of Michigan, spoke on pegmatites. He said that they were of significance economically when mineable quantities of spodumene and beryl existed, as well as high qual-

ity large crystals of sheet mica. Secondly, they were the home of rare species, and better yet, these species developed in fine form. Here are found well developed crystals and specimens that are relatively pure. Of genetic interest they were formed by precipitations from a silicate fluid of high density. Geological mapping of pegmatites has been recent but a pattern has emerged which will be of use to indicate the commercial possibilities and the mining locations in a systematic manner. Slides of European locations were shown, illustrating the three zones of the majority of pegmatites. Dr. Heinrich received an ovation at the conclusion of his talk.

Joe Rothstein
Secretary
255 W. 84th St.
New York 24, N. Y.

Queens Mineral Society

Meeting called to order by President Ted Fredericks, March 25, 1957 at 8:20 P.M. at 85-01 118th Street, Richmond Hill, N. Y. There were 45 members and guests present. The minutes of the previous meeting were read and accepted. The following magazines were displayed: Prospector's Digest, The Geode, Current Events of the Eastern Federation of Mineralogical & Lapidary Societies, The Dop Stick and Chips and Facets. The secretary is grateful to the editors who sent in these fine magazines and particularly to the editor of Prospector's Digest who sent 20 copies for distribution.

Field Trip Committee: In the absence of Dave Hammer and Tom Ronan, no report was rendered.

Membership Committee: Bill Landenberger proposed the following: Richard Thomson, James Geras, Simon Heiney and Alfred Sedano for membership. They were duly elected and were congratulated by the president.

Dinner Committee: Lou Roth reported that the 20th annual dinner would be held at the Y.M.C.A. building, Parsons Boulevard, Jamaica, N. Y., on Tuesday, May 28, 1957 at 4:30 P.M. The menu is mouthwatering at \$2.75 per person. As reservations were made for only 40, the president urged prompt action on part of those who wish to attend. The following will also serve on this committee: Ted Fredericks, Fred Engel Sr. and Bill Schumacher.

Ted Fredericks, true to his promise, has arranged for a Beginners Course in Gemology to start on Monday, May 13, 1957 at A&T Mineral Service, Merrick Road, Springfield Gardens, N. Y. The course will be given by Ted.

It was reported that one of our honorary members, Ernest Maynard, had passed away March 4, 1957, after a long illness. It was further reported that his obituary had been sent in to ROCKS AND MINERALS for publication. Mr. Maynard was an old member and many of us who knew him, will miss him very much.

Lou Roth then donated to the Society a rare copy of "Mineral Club History" by Dr. H. C. Dake. Dr. Dake had sent this copy to Lou with his compliments. It will be added to the Society's archives now in the custody of Ed Marcini.

During the customary recess period the following were exhibited: "Spelunking in Virginia" in Virginia Minerals, Guide for Beginning Fossil Hunters by the Illinois State Geological Survey, Construction Kit of Three Dimension Models of Simple Crystal Forms by Arthur J. Gude, 3rd, of Golden, Colorado, and "Rockhounds' Uncover Earth's Mineral Beauty by George S. Switzer. The members were particularly interested in "Spelunking" and the "Crystal Forms."

The balance of the evening was given over to the first showing at the Society of The International Nickel Company's newest film in sound and color "Mining For Nickel." As the picture was to begin, the "Mining For Nickel" booklet was distributed. Ed White was in charge of the presentation of the film. The film ran for around 45 minutes and told the complete story of nickel mining—from the search for nickel ore and the way it is located through the basic development of a mine and the six different mining methods used to extract the ore. At the conclusion, there was spontaneous applause from the audience.

The meeting was concluded by Al Green and Ted Fredericks who mentioned some ores of nickel. Meeting adjourned at 10:07 P.M.

Louis H. Roth, Secretary
114-67 223rd Street
Cambria Heights 11, N. Y.
LA 5-1380 ..

Fulton County Mineral Club

March 25th Meeting

Our under 16 year old members are to be excused from paying dues. All official reconnaissance for the club in regard to field trips would be reimbursed for mileage. Persons unable to attend meetings can go on trips but will be obliged to pay dues.

April 8th Meeting

Most of the meeting was devoted to a field trip to the Batchellerville area in the near future. Specimens and a sketch map were used.

April 22nd Meeting

The Batchellerville area field trip was finally scheduled for Sunday, April 28th. Articles were read by Lewis Valachovic, field trip chairman, on Herkimer "Diamonds" and nearby localities, such as Gore Mountain—North Creek area.

May 6th Meeting

Lewis Valachovic gave a report on the field trip to Batchellerville. Andrew Palmer, our president, reported on a field trip to Franklin, N. J., on Sunday, April 28th.

A field trip to the Tilly Foster Mine near Brewster, N. Y. was planned for May 19th in company with the Capital District Rock and Mineral Society. Lewis Valachovic displayed samples of minerals received from Central and South Africa, including a rare blue asbestos.

May 20th Meeting

A general discussion held on the trip to the Tilly Foster Mine, May 19th. The next field trip planned is to the Schoharie-Middleburg area June 9th.

Catherine Streeter,
Reporter
368 Blecker St.
Gloversville, N. Y.

Middlesex County Mineral Club

On the evening of February 12th, 1957, the first regular meeting of the Middlesex County Mineral Club was held at the Moodus Library, Moodus, Conn. After a preliminary discussion, the few collectors who came decided to retire to the nearby residence of Mr. and Mrs. Robert Gallant, who had been instrumental in forming the club. An earlier session at the Gallant home, in January, had prepared the way for the first scheduled meeting.

After a number of suggestions had been made, it was agreed that the new organization be called the Middlesex County Mineral Club. Though not restricted to inhabitants of that county, most of the members do live in East Hampton and Moodus. Officers were elected: Robert Gallant, as president, Kenneth Schoell as treasurer, and Richard Schooner as secretary. Others in attendance were Helen Gallant, Ralph Lieser, Francis Phillips, Michael Grieco, and Walter Nichola. Mrs. Lieser, Mrs. Phillips, Mrs. Schoell, and Mr. and Mrs. Frederick Kuhne, none of whom could come to first meeting, were also made members. Following the meeting, refreshments were served.

There has long been a need for a mineral club in the area around East Hampton, Port-

land, Middletown, Haddam, and East Haddam. Despite restrictions which have been imposed on collecting at several well-known localities, especially the Gillette Quarry, there are splendid opportunities for gathering and studying minerals. The first four of the above-mentioned townships are remarkable for the great diversity of their geological formations and mineral types. In fact, this author is writing an independent report which will describe approximately one hundred and fifty different species from the region.

One had only to look at some of the exceptional specimens in the Gallant collection to realize that the opportunity for securing fine material in the area is still very good. Bob has been collecting for not more than three or four years, and only in his spare time. He and "Pappy" Lieser and "Slim" Phillips have done remarkably well in discovering new occurrences of gem-quality beryl. Some of their crystals are actually too beautiful to cut. This secretary has had unusual luck in finding the rarer minerals, many of them new to the area and state. Some of the other new members have not lived in Middlesex County for very long.

Among the prime reasons for organizing the Middlesex County Mineral Club was to provide a regularly scheduled opportunity for the active collectors of the region to get together and talk about minerals, with newly acquired minerals being shown to all. It has been the experience of our members that the sessions of the other Connecticut mineral clubs are too formal... with most of each meeting being devoted to a lecture (not always directly related to mineral collecting, or even mineralogy), and with little chance for discussion.

This mineral club will meet at 8:00 P.M. on the second Tuesday of each month, at the Moodus Library, Moodus, Conn. Visitors are welcomed, and new members solicited. The dues are two dollars a year.

On the night of February 27th, four members of the Middlesex County Mineral Club, Robert Gallant, Ralph Lieser, Francis Phillips, and Richard Schooner, travelled to Meriden to meet with Harold Gariepy and Michael Grieco who are engaged in organizing a mineral club in that city. The six collectors had a wonderful time, complete with refreshments, in the spacious Disabled American Veterans building. Mr. Grieco has set up a permanent exhibit of minerals in two of the rooms... one devoted to general minerals, and the other to fluorescent specimens. A number of school children have already come in to see the exhibit.

The Middlesex County Mineral Club has held three regular meetings since its organization. The membership is steadily increasing, and cards have been printed and given

to our treasurer, Kenneth Schoell, for distribution. The informal nature of our gatherings, with ample opportunity for passing around specimens and discussing them, evidently pleases the majority of the members. It has long been the contention of this secretary that most mineral club meetings are conducted like parliamentary sessions, as if the reports of the committees and the readings of minutes of previous meetings, were an end in themselves.

At the March meeting of the M.C.M.C., Kenneth Schoell, Francis Phillips, and Ralph Lieser exhibited specimens from an old road cut in Newington, Conn. There were excellent quartz crystals, up to more than an inch in length... some loose, and others on matrix. Everyone enjoyed seeing the material, and it was agreed that the locality, learned of through a chance conversation between our president, Robert Gallant, and another collector, was an unusually good source of specimens. It might be well to give a brief description of the place.

The cut, near the Fenn Company in Newington, isn't a recent one, and little collecting had probably been done there in some years before the members of our club began excavating. Narrow fissures traverse an exposure of trap-rock, some of which is considerably altered. The fissures, essentially vertical, are variously filled with nearly solid chalcopryite, white barite, a hydrocarbon (albertite?), and crystallized quartz. Rounded masses of the hydrocarbon, resembling obsidian, occur outside of the veins too. Some of the quartz crystals, in the principal vein, are doubly terminated and embedded in pliable brownish clay. Other quartz crystals are attached to the walls. A few are intergrown with barite and chalcopryite, in pockets which are actually wider parts of the vein. Some of the chalcopryite is crudely crystallized, with individual tetrahedra measuring as much as half an inch across. Malachite is common and azurite rare in oxidized areas. Drusy rhombs of a friable brown material may be pseudomorphs of limonite after calcite. In all, the locality was interesting to see... though it may have been pretty well gone over by the multitude since it was last visited by this secretary.

Michael Grieco, a member from Meriden, was unable to attend the meeting, his wife having died shortly before. It was resolved to send a card of condolence.

Howard Pate, the proprietor of Fluorescent House in Branford, and Lewis Moore of Clinton, expressed a desire to become members. Our meetings are held in Moodus, which is so situated that collectors from the Shore towns don't have to travel too far to be with us.

After the meeting, most of the members and guests stopped at the Gallant residence, nearby, for coffee and cake . . . and a continuation of the meeting, insofar as talk about minerals was concerned. Then, after more coffee, we gradually pulled ourselves free and headed for home. When mineral collectors get together, it seems almost as if they had pieces of lodestone in their pockets . . . holding them in the grip of its magnetism.

At the April meeting, the attendance was particularly good. Henry Muller, East Hampton jeweler, was a visitor, and we expect him to become a member of the club.

One of our members, Ralph Lieser, was hospitalized with a severe illness and unable to attend the meeting. He was sorely missed. "Pappy", as he's known to his collector friends, has spent many a day in wandering over the hills of this area in search of minerals. He's found them, too, in some very unlikely spots. We all hope that he'll be back out in the woods again soon.

This secretary brought a number of specimens to the gathering and they were passed around for inspection and discussion. They included a box of sharp black garnet crystals, probably to be classified as spessartite, which were recently obtained from a boulder near a little pegmatite which can be reached by walking over the crest of Collins Hill behind the middle dump of the Strickland Quarry. Some of the crystals, trapezohedral ones, measured an inch or more in diameter. A vial of what seems to be epsomite, associated with pickeringite, from the Strickland Quarry, was also shown. A great deal of interest was aroused by a one inch cleavage of pale green fluorite from the Slocum Quarry, in East Hampton. It was once given to the secretary by Frank Bibik, who did a lot of work at the locality a couple of years ago. The fluorite phosphoresces after exposure to any kind of light, which isn't true of other fluorite from hereabouts. Michael Grieco had a portable Mineralight with him and we tested the fluorite, along with several other things.

Henry Muller called our attention to a magazine article, describing a new star black "aquamarine" from Brazil. Several of our members are interested in gem cutting. Thus far, they haven't done much work themselves, they have a lot of material to use, once they obtain the equipment.

The meeting was adjourned rather early, around eleven o'clock, and refreshments were enjoyed at the Gallant residence. As usual, the meeting continued there. The new members were amazed to learn that such fine beryl and tourmaline crystals are still being found in the area. Such things are occasionally picked up on the surface of a dump, but Bob Gallant has spent whole days in patiently opening pockets . . . as at the Gillette Quarry.

In fact, he's spent whole nights in working out crystals which were exposed before sundown.

Richard Schooner, Secretary,
P. O. Box 215,
East Hampton, Conn.

New Jersey Mineralogical Society, Inc.

We meet the first Tuesday of the months of September to April from 8:00 to 10:00 P.M. at the Plainfield Public Library, Plainfield, N. J.

Our January Mineral Sight-Identification session was led by Joseph Groben. The theme was Franklin, N. J. minerals, particularly those collected at the Buckwheat Dump. Louis Stirling and Joseph R. Sabo assisted in identifying the "Unknowns" brought in. William Spencer showed a large specimen of Franklinitite xls—he picked up on the dump, also phantom calcite xls from St. Lawrence Co., N. Y., Paul G. Kellinghausen exhibited a suite of fine zeolites and associated minerals from Prospect Park, N. J., also specimens from other localities. Joseph Groben brought a short-wave lamp he had constructed—it was well used at the session. Amanda Knoll had a study-group suite of Buckwheat Dump minerals.

Our February Lapidary meeting and exhibit was well attended. Stewart C. Fulton, past president and director, gave a slide-illustrated talk on various minerals suitable for gem cutting, including the equipment needed to cut, polish and set the gems. The film "Bonanza—Denver & Rio Grande Railroad" was shown depicting the Colorado mining section, particularly Battle Mountain, Colo. and the methods used in quarrying the metals in Metal Mountains. Gold was first mined there in 1858. The other metals mined are lead, zinc, molybdenum, silver. A fine exhibit of polished gem minerals, many mounted in silver were on exhibit. The door prize of a polished agate pendant on silver chain donated by Anthony Bernotas was won by Mrs. Robert B. Butler. Refreshments were served.

At the February Mineral Sight-Identification Session, Alex F. Knoll gave a brief talk on mineral classification—from a mineralogist's point of view and demonstrated a few simple, safe methods of chemical testing of minerals according to Brush-Penfield, including the fusibility, bead test, closed and open tube tests, using the now available Butane hand torch. Mr. Oliver Kollock brought in an interesting specimen—later testing proved it to be synthetic mullite. All "unknowns" brought in were identified, including a specimen of ilmenite from India.

Our March speaker was Dr. T. E. Gillingham, district geologist for the Bear Creek Mining Company, former chief of Physical Exploration for the Atomic Energy Commis-

tion. He spoke on the exploration, development, mining, milling, smelting and refining of iron, lead, zinc, copper, uranium and gold ores in South Dakota, Ontario, Arizona and Colorado. The slides depicted the various methods used in mining and the equipment necessary. Very interesting and informative.

The door prize of ruby sphalerite xls, chalcopyrite on quartz from the Tri-State region, donated by Alex F. Knoll, was won by Mrs. Helen Lemal, the society's librarian.

At the March Sight-Identification Session various minerals were brought in for display and study. William Spencer showed a specimen of mcgovernite in matrix of willemite franklinite and calcite from Franklin, N. J. Amanda Knoll displayed a small suite of zeolites from the Paterson, N. J. area, and Alex Knoll showed a study-type group of Franklin, N. J. minerals.

At the April meeting, the following new officers were elected: Joseph Groben, president (reelected); Oscar Smith 1st vice-president; Robert McAfee, 2nd vice-president; Leigh Thompson, secretary (reelected); Mildred Macuso, treasurer.

The speaker of the evening was Dr. Bennett L. Smith of the Department of Geology at Rutgers University, New Brunswick, N. J. He has done much exploration and mining work in the metal fields—gold and iron. At present, he is doing research in the geological structure of the New Jersey Highlands. His slide-illustrated talk was most interesting and showed the rock formations in various parts of the United States, illustrating faulting, erosion, igneous, sedimentary, metamorphic formations, etc. This knowledge is of great importance in mining activities.

The door prize of Tri-State sphalerite xls, donated by Wilford A. Beveridge was won by Robert B. Butler.

Our April field trip was to the Cedar Hill Quarry in Lancaster Co., Pa., and led by Wilford A. Beveridge. 61 attended. This is serpentine formation. Specimens of genthite, zaraitite, aquacryptite (the mineral that loathes water and on being submerged—goes to pieces—one unhappy way of identifying it!), deweylite, magnetite and chromite were collected. Before proceeding to the Cedar Hill Quarry, many of us met at the Williamsite Serpentine dumps, Rock Springs, Md. Here we collected williamsite, picrolite, kammarite, zaraitite and fine chromite. On this trip we enjoyed fine leadership, Wilford's suite of typical specimens, at the Cedar Hill Quarry, for reference, perfect weather, good collecting and Pennsylvania hospitality.

Our annual dinner and installation of officers in May at the Oak Hill Manor, Metuchen, N. J., was a huge success. Joseph Groben, in his speech of acceptance of presidency, thanked all those who had helped make the past year's activities so successful. George Stilwell, our

chairman of the board of directors, was master of ceremonies. Johnny Case, magician, entertained with the familiar tricks.

The May Field Trip will be to the Imperial Jade, Ltd., at Colts Neck, N. J. Joseph R. Sabo, member of the field trip committee, made arrangements for us to have a guided tour thru the establishment. We will have the opportunity to see jade in various colors, also oriental carved jade in jewelry settings.

Visitors are always welcome at our meetings.

Mrs. Alexander F. Knoll,
Publicity & Public
Relations Chairman
532 Edgar Road,
Westfield, N. J.

Geological Section of Buffalo, N.Y.

The Geological Section met Friday evening, March 1, 1957 in the Humboldt Room of the Buffalo Museum of Science. The entire program was devoted to a sale of geological material from members' collections. Many interesting specimens changed hands.

More than 80 persons, the largest number counted this year, were on hand on April 5th when the meeting was opened by section president, Clifford J. Awald. After a brief business meeting concerning the forthcoming convention of the Eastern Federation of Mineralogical and Lapidary Societies to be held in Jamestown, Virginia, during August 1957, the featured speaker of the evening was introduced. Mr. David E. Jensen, geologist at Ward's Natural Science Establishment, Rochester, N. Y., and chairman of the mineral section of the Rochester Academy of Science, gave an outstanding program entitled: *The Preparation of Geological Specimens from the Field to the Collection*. Illustrated with color slides by Mrs. Jensen, a nationally-known mineral photographer, and specimens from their private collection, the talk explained the steps which should be followed in preparing a specimen for the collection.

Tales of Time and Tide—Coral Reef Fauna was the subject of a talk by Mr. Fred Amos, palaeontologist at Ward's Natural Science Establishment at the May 3rd meeting. With the aid of blackboard drawings and colored slides, Mr. Amos developed the evolution of the coral reef and its fossil inhabitants.

The annual election of officers for the year 1957-1958 was held at the May meeting. The following were elected: Dr. Henry E. Stadlinger, president; Miss Kathryn A. Schenck, vice president; Mr. T. J. Czerniejewski, secretary, and Miss Carol A. Heubusch, treasurer.

Members of the Geological Section are reminded that all material concerning the convention of the Eastern Federation of Mineralogical and Lapidary Societies to be held

in Jamestown, Virginia, during August, 1957, is on file in the Geology Dept. of the Buffalo Museum of Science. Persons planning to attend should consult this data before making their plans.

The Geological Section
of the Buffalo Society
of Natural Sciences
Buffalo Museum of Science
Humboldt Park
Buffalo 11, N. Y.

Mineralogical Society of Pennsylvania

The first field excursion of our society in 1957 was held Sunday, March 10th at the French Creek Mine dumps, Knauertown, Chester County, (Pa.) Though the weather was un-springlike, cold and breezy, 91 persons were in attendance. Energetic digging and pounding on the famous old dumps, rewarded the workers with a number of species, for which the mines were noted. Notably, iron pyrite, chalcopyrite, calcite, with and without byssolite, magnetite, stilpnomelane (chalcodite), erythrite and malachite. John Matter, probably made the most outstanding find of the day—a specimen well coated with erythrite.

The April excursion, of the society was taken to Cedar Hill Quarry, Sunday, the 14th. This extensive quarry, in serpentine, of southern Lancaster County, Pa., with the various shades and colors of the rock, is a most attractive place, many collected specimens for their coloring. Handsome pearly brucite was plentiful, also specimens of deweylite, pectolite, chromite, magnesite, zaraitite, aragonite and williamsite were found. The occasion turned out to be a very enjoyable one for all. Many thanks are due our hosts, Messrs. D. H. Stoltzfus & Son, the owners for their hospitality to our group. 128 members and guests were present.

The May 1957 excursion of the M.S.P. and the occasion of our annual meeting was held Sunday, the 12th, and as in the past, at the quarry of Mr. John C. Showalter, located at Blue Ball, Lancaster County. There were 137 persons present, the majority of whom were most agreeably surprised by the unpromising morning becoming a perfect spring day. There was a large amount of freshly blasted rock, a fine challenge to our eager collectors. Our host, fellow-member and good friend John C. Showalter and courteous



A few Mineralogical Society of Pennsylvania excursionists
at Cedar Hill quarry, Lancaster Co., Penn.

April 14, 1957

Photo by Harold Evans



**Annual meeting of the Mineralogical Society of Pennsylvania,
Blue Ball quarry, Lancaster Co., Penn.**

May 12, 1957

Photo by Harold Evans

son, John Jr., personally made us all most welcome to their splendid quarry and generously supplied good thirst-quenching refreshments for the panting multitude. Nothing could make us more grateful to Mr. Showalter. A notable event for the Harold Evans family was the presence of their three generations, the third being Deborah L. Evans, now three months old, on her first mineral trip, her collecting consisted in a flood of compliments. Among the minerals collected were a great many brilliant pyrite cubes, highly popular with the younger members. Also a fair amount of the famous "Blue Ball" pink dolomite, in some attractive specimens. William Haerberle found nice calcite with some scalenohedral forms. Summed up it was an ideal M.S.P. outing.

Harry W. Trudell
Publicity Committee
1309 Highland Ave.
Abington, Pa.

**Gem & Lapidary
Society of Washington, D. C., Inc.**

Please note the above name of our Society which has been adopted as the official title. We have also been incorporated within the past year.

The following is a list of the present officers;

Dr. Robert E. Stephens, President
3401 39th Street, N. W.
Washington, D. C.

Mr. Aubrey E. Cole, Vice-President
Route 5, Box 81
Kingsley Road
Vienna, Va.

Mrs. Arthur J. Campbell, Secretary
5501 Kirkwood Drive
Washington 16, D. C.

Mrs. Grace MacLeod, Treasurer
4826 Butterworth Pl., N. W.
Washington 16, D. C.

Betty Campbell, Sec.

ILLINOIS

Earth Science Club of N. Illinois

"The Geology of the Black Hills" was the subject of a lecture given by Dr. Paul M. Wright before the Earth Science Club of Northern Illinois, at the Downers Grove High School, at 8:00 P.M. on Friday, May 10th. The talk, which was open to the public, was illustrated with colored slides and rock specimens.

Dr. Wright is professor of chemistry and geology at Wheaton College, his alma mater,

where he has taught for more than twenty-five years. Presently he is chairman of the department.

Dr. Wright earned his Masters and Ph.D. degrees in chemistry at Ohio State University, where he received his early teaching experience. At Wheaton College he helped to establish a science station at the Black Hills, South Dakota, where two semesters of field sciences are taught each summer. He is a licensed aviator and also a licensed amateur radio operator, with call letters of W9NQA.

The Black Hills area contains almost every known mineral. Faults, domes, intrusions, synclines and anticlines are highly exposed and easily studied. Rocks from the pre-Cambrian period, at the dawn of life, to the Cretaceous period, are represented.

This lecture, with the color slides and rock specimens, was a fruitful experience to all who have some interest in the earth sciences, and will make a trip to the Black Hills much more meaningful and enjoyable.

Max L. Hillmer,
Publicity Chairman
417 Sunset Avenue,
La Grange Illinois.

ARIZONA

Mineralogical Society of Arizona

Juniors of the Mineralogical Society of Arizona put on a fine program April 5. Sixteen members prepared talks, but four were unable to attend; Merle Orr, Bill Daley, and Tommy and Judy La Borde. The twelve who participated, covered the field of Arizona minerals and collecting areas thoroughly and efficiently.

It is too bad that the reading public hears so much more about the five per cent juvenile delinquents than they hear about the amazing achievements of the other ninety-five per cent, to which our juniors belong!

These youngsters who have gone into the study of minerals have done so of their own accord, as a hobby, and to supplement their school work. They deserve the highest encouragement and credit from everyone. The senior members of the MSOA are justly proud of them.

The announcements were made by Jimmy Nelson, who is coming up in the world as a TV announcer.

Bill Mitchell was master of ceremonies, and did a bang-up job.

John Dirks described necessary items to take on a field trip; water, food, rock pick and bag for the bonanza. (May we add snake bite kit. Our members have killed several rattlers this spring.)

Terry Anspach gave rules of etiquette when visiting a museum. Important one — Do Not Lean On Cases!

Celia Getsinger gave a clever talk on native copper.

Dickie Benham read his paper on the Grand Canyon, and the Colorado River; which it it could talk, could tell us so much that we do not know.

Dick Sherer explained mineral testing of molybdenum, iron and copper. He demonstrated the blow-pipe and two wet tests, and told about testing with ultra-violet light. His description of the action of the atoms in the phenomenon of fluorescence was accurate in every detail.

Jimmy Nelson gave the history of the Globe-Miami Inspiration mining district, from its silver boom in 1874 to its open-pit copper mining in the 1950's.

Bill Mitchell's subject was the history and geology of the Mammoth area where gold, silver, copper, lead and zinc were mined from 1881 to 1954. He named the old Tiger mine as one of the best hunting places for rock-hounds.

David Walters explained the uses of copper. He exhibited a curious, bronze statue from South Africa, a religious emblem popular in the 16th century. He said some are still in use there today. The statue was of fine workmanship. Bronze, he explained, is 98 per cent copper and 2 per cent lead.

Richard Long named chrysocolla as one of Arizona's choicest gem stones, and said different localities produced different types of color and markings.

Bob Evans described the beauty of cuprite, and its crystal forms.

John Theobald named various collecting areas and the minerals found there.

David Price gave a fine summary of the numerous minerals found in Arizona, the Mineral State.

After the program the juniors held a quiz on the subjects; with Richard Long winning high score. The award was a box of minerals.

One prize of the evening was a fine specimen box made by William Reed in his cabinet shop and donated by him. It was won by Terry Pavey.

At the close, beautiful boxes of specimens were presented by Mr. and Mrs. Harry Hill to each of the junior participants.

The program was supervised by Mrs. Susan Cummings.

At the April 19 meeting of the MSOA, women members covered the field of Arizona gemstones, describing them and telling where they are found.

Following this was shown the film, "Glass and You", furnished by the Corning Glass

Company. The story of glass was illustrated, from that manufactured by volcanos, to present-day complex formulas turned out in glass factories.

Dick Sherer gave the five minute door-prize talk.

A field trip with 10 carloads of rockhounds visited the old Raleigh mine near Gila Bend, where fine micromount crystals of wulfenite and its related minerals were found.

At the annual election of the Mineralogical Society of Arizona held May 3, the following new officers were elected: William Reed, president; Mrs. Susan Cummings, vice president; Mrs. Edna Barritt, secy-treas; 4 new board members, Emma Jo Parsons, Donald Price, Perry Stufflebeam and Marvin Evans.

Talks were given by four junior members; Richard and Bob Evans on their door prizes, John Dirks on ecdemite and gastroliths, and David Watters on large wulfenite crystals which he found at the old Raleigh Mine.

Pet peeves were aired, and Moulton Smith told a humorous tall tale purportedly read from the "hieroglyphs" on a quartz crystal.

May 17, questions were answered from the question box.

The May field trip was an overnight trip to Diamond Point near the Payson area. A profusion of quartz "diamonds" were scratched out of the sand in spots, and found in geodes in a dry wash.

With the potluck supper jamboree scheduled for June 2 at South Mountain Park, meetings will be discontinued until October, except for informal get-togethers once a month during the summer.

Ida Smith, Cor. Secy.,
2238 East McDowell,
Phoenix, Arizona

CALIFORNIA

Pomona Valley Mineral Club

Pomona Valley Mineral Club held its annual election of officers Tuesday, April 9, 1957. Those selected to serve for 1957-58 were Dr. John L. Sugar, president; Mrs. Vivienne Dosse, vice-president; Mrs. Helen Welch, secretary (for the third year); Miss Esther Leggee, treasurer (for second year); retiring president Mr. J. R. Baughman, director; and Mrs. John C. Short, Federation Director.

Pomona Valley Mineral Club, member of California Federation of Mineral Societies, meets on the second Tuesday of each month at Mason Hall on the campus of the Associated Colleges in Claremont, Calif., at 7:15 P. M.

ALASKA

Armchair Prospectors

A group of people from Palmer, Alaska, have formed a rockhound club here. We meet once a month on Friday evening, 3rd of the month, at our local school. We have a large lapidary unit and several slabbing saws. We call ourselves the Armchair Prospectors, because as one member put it, that was a good project for wintertime, sit in our armchairs and gloat over the previous summer's finds. We have only been organized about 9 months, but already have our membership increased. We are studying everything from fossils to uranium prospecting. As far as I know there are only 2 clubs in the whole of Alaska so we have a lot of ground to cover. Anyone coming our way or interested in corresponding, please write to:

Mary E. King, Pres.
Star Rt.
Palmer, Alaska

National Speleological Society Bulletin 18

The National Speleological Society is America's most important organization of cave explorers. They issue at least once a year, a very interesting illustrated bulletin. Bulletin 18, issued in December 1956, 7 3/4 x 10 1/2, 56 page illustrated publication, had a number of informative articles on foreign and U.S. caves. For further information on the Bulletin or the Society contact: Mrs. Frances Cross, Secretary, 125 Tapawingo Road, S.W., Vienna, Va.

Service With A Smile

(Continued from page 381)

business, but a hobby. And I am sure I am speaking for most of the established mineral dealers who sacrifice time and effort to keep this hobby alive.

But, as for Mr. Frank Duncan, it is a pity that a man who devoted the best years of his life in rendering a service not only to collectors, but to museums and universities, should spend his waning years in dire need. I am writing this letter hoping that the contents might furnish you with a theme to pay tribute to a very fine gentleman who was a credit to the hobby of mineral collecting. I am sure that some of the old time collectors will agree with me that we should pay him a tribute.

Yours sincerely,
John S. Albanese
P. O. Box 221
Union, N. J.

WITH OUR ADVERTISERS

Conducted by James N. Bourne
% Rocks and Minerals, Box 29
Peekskill, N. Y.

Advertisers are cordially invited to submit News Items to this Department.

We are pleased to include an item re: to Hugh A. Ford, 110 Wall St., New York 5, N. Y., who has been advertising with R&M over a good many years. His many customers will attest to the fine quality material which he has acquired and lists with each issue of R&M.

Hugh A. Ford, the well-known mineral dealer at 110 Wall St., New York, tells us that he began collecting minerals sixty years ago as a boy of twelve. In the course of 40-odd years, he had acquired, mainly by purchase, a large and quite valuable collection, most of which was destroyed during World War II in the bombing of Bristol, England, where it was stored.

He began dealing in minerals in 1943 while in Cambridge, Mass., and moved to his present address in the early part of 1946. He specializes in minerals from old collections, and does not handle cutting material. Mr. Ford is a member of the Mineralogical Society of America, and a member of several foreign and American Mineral Societies. He does not issue any price lists other than his regular advertisements in ROCKS AND MINERALS.

Note: We feel proud to have Mr. Ford's ad occupy our second cover regularly and urge our readers to take note of his excellent list of minerals with each issue of R&M.

(Just as we reached deadline date, word reached us that Mr. Ford had suffered a slight stroke and so could not prepare his ad copy for this issue. We wish Mr. Ford complete recovery.)

From George A. Bruce, Pres., International Import Company, 604 Peachtree St., N.E., Atlanta 8, Ga., we are in receipt of an item of interest to our readers.

"We take pleasure in advising you of

the recent acquisition of many rare and unusual cut gems. Many were obtained from well-known private collections and represent unusually excellent specimens. There is in stock a wide variety at present, but being rare, many are not easily replaced. To mention a few: alexandrites, kornerupines, sphenes, scapolite cat's-eyes, sinhalites, zincites (one of the rarest gems there is), blue apatites, etc.

"As you know from the sampling of stones listed in our catalogue, we have a wide variety of the more popular gemstones from agates to diamonds in all the various cuts, sizes and grades, but as an added service to advanced collectors and museums, every possible effort is being made to supply every known gemstone. We welcome correspondence with interested collectors and museums and will work in close cooperation with them in enhancing their collections. Our same 10-day approval service applies. However, whether one be a novice or advanced collector, we always exert every effort toward their complete satisfaction."

Note: The reliability of International Import Company is unquestioned as to the satisfaction of the customer and to the very fine material acquired for those who want the best.

From Shale's Gems & Minerals, Box 35123, Los Angeles 35, Calif., we are in receipt of 3 very nice specimens donated to this department. They are as follows: (1) Ampanihy, Madagascar: Corundum (Ruby), deep red, loose, platy xls, 1" diam. very nice, the largest ruby xl we ever saw. (2) Portuguese East Africa: Corundum (sapphire), deep blue, loose xl, 1x1x1 (small section is grayish) very nice and the largest sapphire we ever saw. (3) Brazil: loose platy, quartz xl, 1x1-3/4, also very nice.

Note. The above are samples of Shale's large stock and they represent some of their new acquisitions. Readers may inquire of Shale's for purchase of similar material.

Harvey R. Shull, 1516 So. Market, Oskaloosa, Iowa forwards us an interesting item. Mr. Shull advertises through R&M via the classified section.

"I have traveled ninety-four thousand miles through 28 states in search of rocks and for the past nine years have been an avid collector of rocks and minerals. While on this long expedition I have examined caverns, caves, and old mine shafts, spent much time alone on the Arizona desert, and searched at night for fluorescent rocks. Some 15,000 lbs. of rocks were brought home from this trip.

"I list as my rarest find a piece of Oklahoma sphalerite containing galena, garnets, and pyrites, all on a background of flint and calcite. The color combinations are beautiful, while curious designs decorate the polished surface.

"There is great satisfaction in my hobby. You get to know people from all over the country. Why, just this year 'rockhounds' have stopped from Indiana, Michigan, Utah, California, Arizona, Oregon, and Ohio."

Note: We sincerely wish Mr. Shull many more years of enjoyment as to his chosen hobby.

Ronald Januzzi, prop. of the Dinosaur Gift and Mineral Shoppe, Danbury-Brewster Road, Route 6, Brewster, N. Y., is advertising with us this issue in our display section of R&M. We are pleased to accept his fine ad. Item re: to his Shoppe reads as follows:

"I've acquired 1000 dinosaur tracks last fall and I carry the dinosaur bone in the natural state and also polished for barques that I use in the jewelry I sell. I also have the dinosaur gastroliths.

"We have on display a large array of jewelry made with barques or tumbled stones for men, women and chil-

dren. I also carry gifts more or less in the natural history or scientific trend; nature series books and odd and unique gifts, also imported gifts like alabaster bird baths and wood carvings from Italy; African wood carving and many fluorescent minerals.

"We also handle cutting material, Ultra Violet lights and mineral picks. We are open every day including Sunday, 10 A.M. to 9 P.M. during June, July and August thru Labor Day."

Note: Mr. Januzzi's latest book, "Minerals On Parade", deals solely with minerals to be found in this area and New York State. This book was written for children but parents may get enjoyment from its contents also. Stop in and chat with Mr. Januzzi on your visit to New York State this summer at the Dinosaur Gift and Mineral Shoppe at Brewster, N. Y.

The Victors, proprietors of the Victor Agate Shop, South 1709 Cedar, Spokane 41, Wash., have on the market a new book titled "Gem Tumbling and Baroque Jewelry Making," which is a must for the beginner. Information in regards to the book reads as follows:

"Step by step instruction for the beginner, ideas and helpful suggestions for the experienced, 40 pages illustrated, clear and detailed instructions, all guess work removed and written by rockhounds for rockhounds. \$2.00 postpaid anywhere in the U.S. Copy may be obtained at your local dealer or order from Victor Agate Shop, South 1709 Cedar, Spokane 41, Wash."

Below is an item Scott J. Williams, 2346 South Scottsdale Road, Scottsdale, Ariz., wishes passed on to our readers.

"Your inquiries are always welcomed. If you have any questions or special problems concerning minerals, do not hesitate to write. We offer you our qualified and full time services in connection with the formation and the maintenance of your mineral collection.

"You are invited to visit us whenever you are in the area. We are open the 'year round' and there are but 12 miles between downtown Phoenix and unique downtown Scottsdale whose city limits border one another. We are conventionally located (without parking problems) just south of the main business center on South Scottsdale Road, between two principal thoroughfares, Thomas and McDowell Roads. Our hours are 9-5 daily—Sundays and evenings by appointment."

Below is a letter of appreciation received from the Gude's, Box 374, Golden, Colo., re: to our mention in March-April issue of R&M of their 15 paper models "Kit" which they have recently introduced.

"How can we ever thank you enough for such nice writeups in R&M. I could not wait until my Jim came home from his Lab to tell him about it, and he was speechless. We both thank you.

"We have heard from Ohio, Tennessee, Texas, Wyoming, Florida, New York, New Jersey, and many other places—all wanting a copy of the \$1 Kit.

"The thing which surprises me a great deal is that the children in Golden, Colo., 10-12 years of age, are buying the Kit. I think it's a very excellent investment for a child. Most toys for \$1 break the minute they are bought and then one has nothing! But who knows? Perhaps this little Kit for only \$1 will help some potential little scientists.

"I am enclosing a few newly printed circulars on the little Kit. Just thought you might like to see them. But, you know what? Even though I ordered 5,000 of them (2,000 went to some dealers who stock the Kit). I don't think I shall even bother sending them out. I'm just too busy filling orders from those nice writeups and our ad with you!"

We would like to make mention of a new "Tumbler" to be introduced shortly by Harry Condos of the Condo's Rock Shop, 138 Main St., Seal Beach, Calif.

Mr. Condos relates to us the following:

"The action of our new "Tumbler" will be triple. Instead of one drum we have two, one for grinding and one for polishing. By turning a set screw the action and fall of the stones can be increased or decreased as desired. Broken and cracked stones are held to a very small percentage. The machine has a metal stand and can be set up in a few minutes. The construction of the Tumbler is all metal and is fool proof in operation."

Note: This new "Tumbler" being introduced by the Condo's Rock Shop should prove very popular and inquiries re: to same will be gratefully accepted by the Condo's.

Mr. & Mrs. Vernon E. Keller, proprietors of Keller's Specialty House, 32 Herbert Terrace, Livingston, N. J., who are advertising with R&M this issue via our display section, wish us to announce their introduction of a new "Safety Goggle."

"The goggles are manufactured by Progress Industries, Inc., Norwood, R. I. The goggle is completely cushioned on the face and still allows 180 degree unobstructed vision with complete eye protection. Lens is shatterproof and may be easily replaced or quickly changed from clear to green. Replacement lenses are available. Adequate ventilation is provided by multiple holes in the frame. Adjustable elastic head band provides secure, comfortable fit and allows complete adjustment to the individual's needs."

"SAVUE" Safety goggles can be used when mineral collecting, fishing, sports car driving, skiing, spray painting, abrasive grinding, and while handling chemicals or being occupied in your home work shop."

Note: We are the proud recipient of a pair of "SAVUE" Safety goggles and are more than pleased to recommend their use very highly while engaged in any of the above hobbies or whenever necessary to protect your eyes.

SOME GEM OCCURRENCES IN CAMBODIA

By E. Saurin

Services des Mines de la Directorate
Des Mines et de l'Industrie, Saigon, Vietnam

(A translation of a French article which appeared in the monthly review of the Institut d'Emission Des Etats du Cambodge)

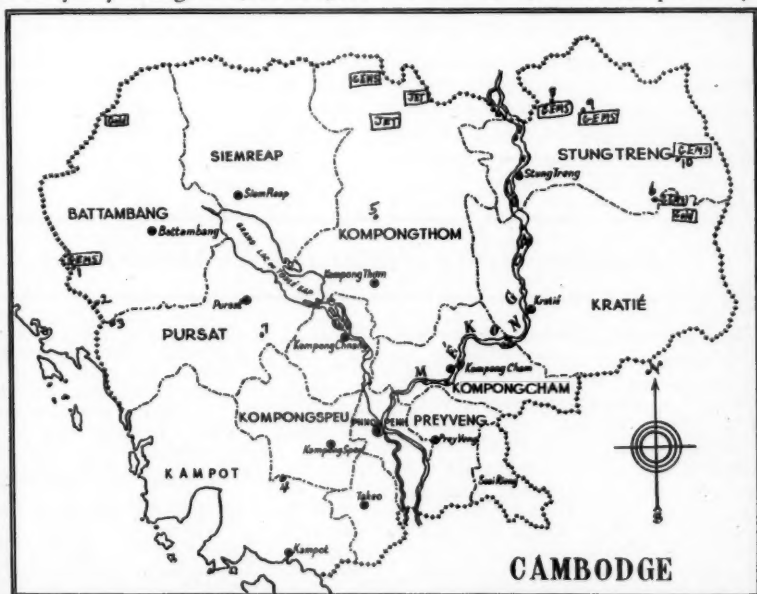
In Cambodia there are occurrences of (ruby and sapphire) and zircon. All the fields are in connection with basalt, either disintegrated or in lumps. It is assumed that these corundums and zircons were previously in a gangue of crystalline schists which have been brought to the surface by basalt flows.

The various fields known in Cambodia are: Pailin, where sapphires and a few rubies have been obtained since 1875. The yield at the beginning was as high as 12 kg. per two months but has declined since. Anyhow, from 1920 on the yield suffered no decline. It seems that the yearly average is 2,000 to 5,000

carats of corundum. Yet the better gems are sent to Siam or India and the statistics do seem reliable. Furthermore, there is no distinction between sapphire and what is known as white sapphire (in fact zircon). In 1939, the value of the production at Pailin reached 63,000 piasters.

At Bo Khal Stung, near Phum Kong, 20 km. south of Pailin, similar fields were worked up to 1933. They yielded more rubies than sapphires. Further south in the sandstone of Cardamomes, in the valley of the Tatey River, M. Gubler has found garnets and orthoclases which means that other minerals are nearby.

North of the Elephant Range, in the basalts of Pech Nil, between Sre' Umbel and Kompong Speu, 55 km. southwest of that town, there was previously an



STEM-CLV-GR. 0.22

Map of Cambodia (Cambodge) showing the location of the gem districts as follows:

- | | | |
|------------------|------------|--------------|
| 1-Pailin | 4-Pech Nil | 8-Siempang |
| 2-Bo Khal Stung | 5-Rovieng | 9-Voeune Sai |
| 3-Cardomones Mts | 6-Bo Keo | 10-Bokham |
| | 7-Tasai | |

Note: Km=kilometer=5/8 mile

important field of gems. In the province of Kompong Thom, about 10 km. northeast of Rovieng and 3 km. east of Chuon, on the left bank of the Stung Sen River, there is a basalt locality that is very slightly attacked by erosion. There, in some small streams, I have found among the pebbles numerous zircons and a few sapphires and albites. The importance of this field is scanty and it was not worked in 1944.

In the province of Stung Treng, Bo Keo is an important center for zircons and sapphires. In the neighborhood, other centers have been created. There were in 1940 centers at Bo Loi, 20 km. north of Bo Keo; Bo Pantingum, south of Bo Keo, La Eune, 15 km. west of Bo Keo. In 1937, the returns were 30,000 piasters to local personnel and 60,000 piasters to the Burmese who sold the production in Bangkok. The Burmese have, in fact, the monopoly of the fields at Pailin and Bo Keo; they monopolize the trade and own workshops in Phnom Penh. Flawless sapphires and rubies are fairly scarce and are sold on the markets of Bangkok and Calcutta. They are seldom found in Phnom Penh where most of the time synthetic gems coming from Europe are sold as if they were true ones. Zircons are very numerous and in the early times were nearly value-

less. Yet there is a process which turns them, at a high temperature, limpid, and they have a market in Europe and the United States. Cut as diamonds, they are on sale in local jewelry shops. Rough or cut, they are regularly exported. In 1939, 65,000 piasters worth went to India. In 1940, 20,244 carats, worth \$4,000, went to the United States. (35 piasters equals \$1.00).

Pagodite

Pagodite is locally known as marble of Pursat. It is a soft stone with various colors. It is composed of hydrous silicate of aluminum (kaolinite) which comes out of the alteration of rhyolites. It is found at Tasei, on the east base of Kchol Hill, and worked at Pursat for ornamentation.

Quartz

Near to Siempang, Voeune Sai and Bokham, quartz crystals and amethysts are found among alluvium. Some of these quartz crystals have been exported for optic use. These attempts were not resumed. Homogenous and big crystals up to 15 centimeters long are found and could be used for piezoelectric purposes.

(This article was sent R&M by Neal Guffy of Guffey Institute and Lapidary, 3001 M St., N.W. Washington 7, D. C., who in turn received it from a former student of the Institute, Air Force Lt. Col. W. A. Lucas).

Publications Recently Received

Shaub—The Book of Mineral Photographs.

By B. M. Shaub, Ph. D., Associate Professor of Mineralogy and Petrography, Smith College—118 pp. over 100 full-page pictures of fine minerals or rock specimens with descriptions. 6¼ x 8½. Published by Dr. Shaub, 159 Elm St., Northampton, Mass. \$1.68

The BOOK of MINERAL PHOTOGRAPHS is the first publication to be devoted entirely to a substantial number of large-sized photographs of minerals. Most mineral photographs available at present are to be found in the magazines and textbooks devoted to minerals, rocks or gems. The illustrations in such publications are usually small and the details of the specimens are usually lacking. The large-sized illustration in the BOOK of MINERAL PHOTOGRAPHS show as many

details as possible and they are second only to the actual specimens for study purposes.

The photographs in this book are printed in black and white, because illustrations printed to show the true colors of minerals are very expensive; moreover only a few selected mineral specimens are sufficiently colorful to warrant the cost of reproduction in color.

The specimens illustrated herein have been selected to show one or more of the various forms in which the mineral occurs. Illustrations of massive samples of minerals are usually indistinguishable one from the other. It is the forms of minerals—the crystals and crystal aggregates—which received the appellation "les fleurs des mineraux" (the flowers of the minerals) by M L'Abbe Haüy in 1817. Hence the subjects of the illustrations of this book

are largely fine crystals or other definite forms assumed by minerals.

The very great importance of minerals in our economy, should offer an incentive for everyone to be somewhat acquainted with them. The study of minerals is an exact science, however a general knowledge of them can be obtained through good descriptive illustrations.

Flint—Glacial and Pleistocene Geology.

By Richard Foster Flint; Professor of Geology in Yale University—553 pp., 5 pls., over 100 figs. 6¼ x 9½. Published by John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y. Price \$12.50.

This book began as a revision of *Glacial Geology and the Pleistocene Epoch*, published in 1947. But because the intervening years have seen the accomplishment of Pleistocene research at an unprecedented rate, it soon became apparent that an up-to-date treatment of the subject demanded a new book rather than a revision of the older one.

The greatest changes in our understanding of Pleistocene events result from new, rapidly evolving methods of dating, from pollen studies, and from the stratigraphy revealed by sediment cores from beneath the oceans. As a result of such contributions stratigraphic subdivision of the extreme upper and extreme lower parts of the Pleistocene series is now in a state of flux, but it promises to become much more firm within the next few years.

The author presents a new treatment of glaciology, designed to be more meaningful for the study of glacial geology. There are up-to-date discussions of sea-floor stratigraphy, soils, frozen-ground phenomena, and geochemical contributions to chronology and the measurement of temperatures. This work also includes a more detailed consideration of animals and plants than was available in the earlier version. A great deal of new stratigraphic information is assembled in the form of correlation charts.

Dunbar-Rodgers—Principles of Stratigraphy.

By Carl O. Dunbar, Professor of Paleontology and Stratigraphy, and John Rodgers, Associate Professor of Geology, both of Yale University—356 pp., 123 figs. Published by John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y. Price \$10.00.

This volume provides the first broad survey of stratigraphic principles in over forty years. The principles are stressed throughout, but they are illustrated by many examples from

the stratigraphic record. Emphasis is on synthesis and the interpretation of the data of stratigraphy.

The authors begin with a discussion of the environments of deposition, followed by a treatment of basic stratigraphic relations. They then describe the interpretation of specific lithotypes, and devote the final portion of the book to synthesis.

The illustrations are especially noteworthy. Virtually all the drawings were made specifically for this book. They include many maps and cross sections illustrating sedimentary environments and stratigraphic relations. Photographs were chosen with particular care and are useful supplements to the written material.

Tunell-Murdoch — Laboratory Manual of Crystallography for students of Mineralogy and Geology.

By George Tunell, Ph. D., Professor of Geology, and Joseph Murdoch, Ph. D., Professor of Geology, University of California—55 pp., 20 figs., 8¾ x 11. Published by Wm. C. Brown Company 215 W. 9th, Dubuque, Iowa—Price \$2.75.

This book has been written to provide beginning students of mineralogy and geology with a laboratory manual of crystallography for use in their studies of minerals and rocks.

Textbooks of mineralogy contain considerable material that students do not use in an elementary course, the purpose of these books not being limited so narrowly. On the other hand, it has been found by many beginning students that statements of some elementary principles and basic facts are not given in as much detail as they wish in most textbooks. To provide a clear exposition of the essential material needed in elementary work has been the aim of the authors of this laboratory Manual.

Erwin—Geology of the limestone of Isle La Motte and South Hero Island, Vermont.

By Robert B. Erwin, 94 pp., 20 figs., 3 pls., 6x9. Published by Vermont Development Commission, Montpelier, Vt., as Bull. No. 9—1957.

The two islands covered in this report, South Hero Island and Isle La Motte, are located in the Upper Champlain Valley of Vermont. We have seen some beautiful calcite xls and very good black marble specimens from the limestone quarries on Isle La Motte.

THE GEM COLLECTOR

Conducted by Bill Cole
408 Dickinson, Chillicothe, Mo.

THE QUARTZ GEMS

(PART I—THE CRYSTALLINE FORMS)

Quartz is the commonest mineral on earth, and nearly everyone in all walks of life is familiar with it in one form or another, whether it be sand of the beach or the finest crystal jewelry. It is usually the first mineral encountered by the pebble pup who starts his hunting career in the neighbor's driveway, and it is also the mineral which men will brave the dangers of the Brazilian jungle in order to obtain choice specimens. Quartz is so wide spread that there is little use in mentioning any specific localities, however, there are a few that are well known for certain types of quartz that we will talk about later on.

Pure quartz is composed of silicon dioxide and when pure enough is the most transparent substance known to man; however, it is not always so pure and often contains many impurities such as Iron Oxide, Carbon, and Carbon Dioxide bubbles, also whole crystals may be included within a crystal of quartz such as Rutile, Tourmaline and various Micas.

The commonest form of crystalline quartz is the milky variety which is nothing more than rock crystal with so many fractures and included bubbles that it appears white and opaque. This type is most often found in vein masses and small crystals. It is a common accessory mineral to many of the metallic ores such as scheelite and native gold. This fact is accounted for in that the quartz is formed from super-heated solutions deep in the earth which carry dissolved minerals which crystallize out upon cooling.

The next most abundant form of quartz, would be the colorless variety rock crystal, which is always found in fine crystals some up to several inches

in diameter. Next in line would follow smoky quartz which is the smoky brown shade which varies from deep brown (Morion) to a yellowish brown and clear golden color (Citrine). Then would come the pink shade known as Rose Quartz. This variety though crystalline in structure is seldom found in single crystals and is very rare in this form, it is usually in large masses of various shades of pink. And finally the king of all quartz, the amethyst. This beautiful royal purple shade is the most sought after color for gems and therefore is the most valuable. The hardness is 7 on Mohs scale and is therefore a quite durable gem. The refractive index is from 1.54 to 1.55 and so must depend on its color for beauty as fire is lacking in a cut gem. The specific gravity runs around 2.65, depending on the impurities.

The quartz has had a long history and was probably one of the first minerals man ever sought to use as an ornament. Since the amethyst is the most valuable form we will start with it. The name Amethyst means not drunken and is from the Greek meaning drink or drunken, and no doubt originated from the appearance of the stone or from the superstition that the owner of an amethyst would never fall under the influence of alcohol no matter how much he drank. In ancient Rome it was quite popular to have wine goblets carved from amethyst which would then lend the illusion of wine, the most popular beverage, to water or any other liquid, and no doubt old Nero saved a good deal on his wine bill by passing out these amethyst cups to his well soused guests who wouldn't know the difference between water or wine. Also, besides the not drunken virtue, the amethyst was given

many other protective powers, one of which was that the wearer would be protected in battle and would come out unharmed. Whether it worked or not is hard to tell. Later on in history the amethyst became so popular that it out-ranked the diamond in value, and during the Dark Ages, amethyst beads were the most valuable jewelry made. The church has also adopted the amethyst as the gem to be set in the rings worn by the Pope and the rings of the bishops and cardinals. The stone was probably chosen back in the dawn of Christianity in ancient Rome while the gem was so popular.

Next we have the smoky and citrine varieties, which are so close to each other and can grade off into one another with only a little variation in color, that they should be taken together. The citrine has a very close resemblance to genuine topaz and is often mistaken for it. Sometimes this mistaken identity is one of ignorance and then again it can be one of deceit. The shade most often used as a substitute for genuine topaz is the deep golden red shade known as *maderia*, and even in itself is a valuable gem. The smoky color most used in jewelry is the deep, almost black shade, known as *morian*, and when cut has a deep brown color with flashes of a lighter brown deep within the gem.

Rose quartz is also used extensively for the carving of ornaments and for cabs, once in a great while a specimen is found that is clear enough to facet, and then a fine gem is produced, which can resemble pink tourmaline or beryl. However, the most noted use is by the Chinese lapidaries, who cut the material into great many ornaments, vases and beads.

The type of quartz that is used most today in jewelry is rock crystal, a variety that has retained its popularity for centuries. The most general use throughout the ages has been for carving and many notable examples of this art can be seen in the museums throughout the world where they have been preserved for pos-

terity. In Rome it was used mainly for the carving of drinking goblets and vases, as glass had not yet been invented. Later on the ancient Chinese used the material to carve crystal balls which they thought gave them the power to foresee the future. Still later the Russian lapidaries made a great many fine carvings from rock crystal and some of the most beautiful works in existence today were made by these skilled men. Their work is especially noted for the beautiful free flowing lines and bas relief carvings on the objects.

One other type or color of crystalline quartz that has been discovered only recently is the green amethyst, a shade that is obtained by heating a certain type of amethyst in closed ovens until it assumes a fine green color, quite like the Peridot. This material is currently available from several dealers and is very beautiful when cut in the emerald or step cut.

As to the localities where quartz is found the most important are: rock crystal, Hot Springs, Arkansas; smoky, Pikes Peak, Colorado, and the Swiss Alps; amethyst, Brazil and Mexico; citrine, Brazil; rose, Brazil and Custer, South Dakota. This is far from a complete list of localities but it is the most well known to American gem and mineral collectors.

Well, we will take up where we left off next time, but meanwhile, write your favorite dealer and see what he has to offer in the quartz line and add a few bits of color to your gem collection. So long for now.

Eckert's Rocks and Minerals

Eckert Mineral Research, Florence, Colo., recently released their most comprehensive rocks and minerals supply catalog. It is a beautifully printed 96 page, 8½ x 11, profusely illustrated publication covering all phases of geology and mineralogy including books, magazines, equipment (lapidary and general), precious and semi-precious stones, rock and mineral specimens, etc. etc. If you are interested in any branch of geology or mineralogy, Eckert's catalog should be in your hands. The catalog sells for only \$1, and this will be credited toward any purchase of \$10. Get your copy TODAY!



WHERE TO GET IT

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"Mandarin" Jade Cabochons. Lucent, brilliant, light green, selected Jade Mountain Nephrite. Many standard sizes, patterns. Specimen, tax paid and list, One Dollar. State pattern desired.
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15 paper models for \$1. When assembled, these help the beginning Rock Hound to identify common natural crystals.

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Cabochons expertly cut from your materials or ours. Moderate charge, prompt service. Write your needs.

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Fluorescent House, Beach Place, Branford, Conn. Largest selection of fluorescent minerals & accessories, lamps, etc., in the East. Visit us or send dime for catalog.

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"Estwing, polished steel, 1-piece, handle covered with smooth leather. Postpaid, pick-end \$5.25 (with leather belt sheath \$6.35), chisel-end \$5.50, sportsman's axe with leather belt sheath \$6.35 Send 50c for Science Catalogue." **New York Scientific Supply Co., 28 W. 30th., St., N. Y. 1, N. Y.**

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INFORMATION

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Fine Cabochons

Capt. G. W. Owens

See—The Amateur Lapidary column

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